Coronary Heart Disease and Migrant Asian Indians in Australia: Experiences, Health Knowledge, Beliefs and Behaviours

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy-

College of Health & Science
University of Western Sydney

© Shantala Mohan

March 2007
Dedicated to my father S.N. Swamy.

Your passion for knowledge and education

&

your belief in me has led to this endeavour!
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Candidate’s Statement

Except where reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma.

No other person’s work has been used without due acknowledgement in the main text of the thesis.

This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution

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Shantala Mohan                                                             Date
Style, notation and format of interview transcripts

Pseudonyms are used for each participant against the quotes in the text. A suffix -P for patients, -FM for family members and -HP for ‘healthy’ participants is used against each pseudonym. Where survey data for patients and family members are represented another suffix -S is used after -P or after -FM.

Participants’ quotes, which are less than 40 words, are presented within double inverted commas, italicized and incorporated with the rest of the text. Quotes over 40 words or more or presented as a free standing paragraph without quotation marks and indented from left and right margins. Facilitative sounds used by the speakers and hesitations such as 'umm' or 'err' have been omitted in instances where they do not add meaning to the quotation.

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LIST OF ABBREVIATIONS

- ABS: Australian Bureau of Statistics
- AIHW: Australian Institute of Health and Welfare
- CADI: Coronary Artery Disease Among Indians
- CHD: Coronary Heart Disease
- DIMA: Australian Department of Immigration and Multicultural Affairs
- HDL: High Density Lipoprotein
- LDL: Low Density Lipoprotein
- MEA: Ministry of External Affairs
- MI: Myocardial Infarction
- NHMRC: National Health and Medical Research Council
- NSW: New South Wales
- UK: United Kingdom
- US: United States
- USA: United States of America
- WHO: World Health Organisation
ABSTRACT

It is consistently documented in the literature that Asian Indians are at high risk of coronary heart disease and this risk is exacerbated among migrant Asian Indians globally. Asian Indians have a premature, markedly severe and malignant course of coronary heart disease. According to the latest reports by the Australian Department of Immigration and Multicultural Affairs, India is the third largest source of immigrants to Australia. This study was built on the premise that in order to provide culturally competent and sensitive care for migrant Asian Indians with coronary heart disease in a multicultural society such as Australia, it is important to explore migrant Asian Indians’ experiences, risk factor knowledge and health beliefs and behaviours in relation to coronary heart disease. This qualitative study was guided by the constructivist paradigm and used semi-structured in-depth interviews and a post-interview survey of patients and family members as the data collection process. Twenty-nine migrant Asian Indians (eight patients, five family members and 16 ‘healthy’ participants) volunteered to participate in the study and share their experiences, understanding and perspectives of coronary heart disease. The non-linear approach of data collection and analysis occurred concurrently, was guided by the hermeneutic dialectic process and inductive analysis was used to sort data into categories.

Analyses of findings from the study suggest a period of vulnerability for both patients and family members following the cardiac event. Preventing recurrence of the event and restoring normalcy in their lives was of prime importance for patients and family members. However any lifestyle changes made by patients after the cardiac event were inconsistent, with family members facing difficulties in implementing healthy lifestyle changes. Most participants had a fairly good knowledge of coronary heart disease risk factors. Asian Indian culture through its fundamental principles of ‘karma’ and ‘dharma’ had a significant influence on participants’ health beliefs and behaviour in relation to coronary heart disease. With the perceived centrality of family in Asian Indian culture, less priority was
given to their own health, with visits to the doctor being considered only for emergencies. Tolerating pain and illness, being resistant to change, giving less priority to health were some characteristics perceived to be unique to Asian Indians. Although Asian Indian culture was held responsible by participants for an unhealthy lifestyle, participants believed that their culture provided them with the strength and courage to cope with illness. Occurrence of coronary heart disease was attributed to ‘karma’ and was believed to be an event that could not be prevented.

This study provides insights into the influence of Indian culture on coronary heart disease among Indians. These findings indicate the need for health promotion and cardiac illness prevention programs that use intervention models of health behaviour change and are sensitive to the needs of migrants from Asian Indian culture. It is necessary for health care professionals to meet the challenge of coronary heart disease among Indians by using a multilevel cohesive strategy and ensure that the problem is tackled at the primary, secondary and tertiary levels. The major limitation of the study was that the data obtained were from a group of tertiary-educated migrant Indians. Future studies should explore the coronary heart disease perspectives of migrant Indians with different education levels and from the perspective of second–generation Indians in Australia.
ABSTRACT: CHAPTER 1

This chapter introduces the reader to the study and provides a snapshot of the contents and layout of the thesis. The current study aims to investigate migrant Asian Indians’ coronary heart disease experiences, risk factor knowledge and related health beliefs and behaviours in the Australian context. The global burden of coronary heart disease, worldwide documentation of the epidemic of coronary heart disease among migrant Asian Indians and large numbers of Asian Indians migrating to different countries worldwide including Australia, were some factors that provided the impetus to this study. It is anticipated that the study findings will inform prevention and management of coronary heart disease among migrant Asian Indians worldwide. Parts of the literature used in this chapter and definitions of terms have been published in a refereed journal article as indicated in Appendix 1.
CHAPTER 1: INTRODUCTION

1.1 Introduction

This thesis is the result of an investigation on the topic of coronary heart disease (CHD) in Asian Indian migrants residing in Australia. Specifically, the study focuses on health beliefs and related health behaviours, knowledge of CHD risk factors and experiences of CHD trajectory by migrant Asian Indians. In this chapter, I will introduce the reader to the study and specify the research questions that this study will address. This chapter will also discuss the study significance and finally provide an overview of the contents of each chapter in this thesis.

CHD is the leading cause of mortality and morbidity in many countries worldwide and it is estimated that it will be the single largest cause of disease burden globally by the year 2020 (Lee et al., 2001; World Health organisation, 1999). Asian Indians have the highest incidence, prevalence, mortality and morbidity from CHD in comparison to any other population/cultural group globally (Bahl, Prabhakaran & Karthikeyan 2001; Enas, 2000; Enas & Senthilkumar, 2001; Kanduri 2003; McKeigue, Ferrie, Pierpont & Marmot, 1993; Sharma & Ganguly 2005). Thus health professionals and cardiac researchers worldwide are confronted with this perplexing issue of CHD amongst Asian Indians, which continues to be a major healthcare challenge.

A number of epidemiological studies worldwide have reported the epidemic of CHD in Asian Indians (Anand et al., 1998; Bahl, et al., 2001; Danaraj, Acker, Danaraj, Ong & Yam, 1959; Enas & Senthilkumar, 2001; Jajoo, Kalantri, Gupta, Jain & Gupta, 1988; Jonnalagadda & Diwan, 2005; Kanduri, 2003; Lee et al., 2001; Miller, Alexis, Beckles, Byan & Price, 1982). However these quantitative
and epidemiological studies have explored only some aspects of Asian Indians’ experiences of CHD and the impact of Asian Indian culture on knowledge, health beliefs and behaviours in relation to CHD. With Asian Indians immigrating to a number of countries worldwide in large numbers (Mahajan & Birmingham, 2004; Sahoo, 2004) including Australia, it is only timely to explore these aspects in migrant Asian Indians, as the problem of CHD is reported to be worse among Asian Indian immigrants irrespective of the country to which they migrate (Bhopal, 2000; Fox & Shapiro, 1988).

In order to provide culturally competent and sensitive care for migrant Asian Indians with CHD and to promote cardiac illness prevention behaviours it is vital to have a clear understanding of the impact of factors such as culture and migration on CHD knowledge, health beliefs and behaviours. By exploring these uncharted aspects, the study aims to fill gaps in the literature and provide new knowledge that could help create tailored CHD practice guidelines and health promotion programs that are sensitive to the Asian Indian culture.

1.2 Background

I bring to this research my personal experience as a woman of Asian Indian origin, my educational and professional background as a doctor and researcher, my own assumptions of CHD from the perspective of a family member and health professional and as a mother. I wish to begin this section by reflecting on my own cultural values as a woman of Indian heritage and its influence on my beliefs, health attitude and health behaviour in relation to CHD. Subsequently, I wish to present to the reader my understanding and assumptions about CHD that are influenced by my cultural and professional background and personal experience as a family member, so that the reader can understand the context I am coming from.
1.2.1 Being Asian Indian: Personal reflections of cultural values

Despite the enormous influence of Asian Indian culture on my lifestyle, beliefs, values, and notions about acceptable and unacceptable behaviour, it is extremely difficult to extract culture from my core identity as a human being and as an individual. My Indian cultural heritage has been a significant part of my upbringing and has strengthened as years progressed and as a result of life experiences.

Strongly embedded in my value system is the concept of ‘Dharma’, which means an individual has to perform his duties in life at every stage from birth to death, from being a child, a student, mother/father and grandparent. Faith in God, honesty, respect to parents and other family members (who nurture and care for us), elders (whose life experiences and wisdom inform our actions), teachers (who impart knowledge) and other religions were among the very first lessons I learnt from my culture. Central to every aspect in my life are ‘family ties’ and the concept of ‘family unit.’ Elderly parents and grandparents are always the family’s responsibility and live with family, irrespective of their health condition. Taking on the responsibility of an elderly parent and/or grandparent could add to the already existing stress in some families but is still endured as a primary cultural obligation. Irrespective of these obligations and stresses our thinking is trained to have no second thoughts about avoiding these responsibilities.

A number of traditional and religious practices instigated from the Indian culture may have an influence on my health and health behaviour. Fasting for long hours on religious occasions, social gatherings and family get togethers is something that has been practised for many generations in my family. Festivals and religious occasions are plentiful throughout the year and food is not consumed until the long lasting rituals and prayers are completed. Consumption of excessive amounts of sweets, fried food, ghee (clarified butter) especially during these days, after long hours of fasting was quite common in our family.
and also amongst other families in our community. Inadequate consumption of vegetables and infrequent consumption of fruits and milk was a common practice in my family. Fruits and milk were considered to be necessary only for growing children and for the frail aged and so adult family members often saved their share of fruits for children in the family. These practices have continued since our migration to Australia, but have been modified to include adding more salads to our meals, having at least one fruit a day and increasing the amount of yoghurt intake.

Regular physical exercise was never a lifestyle component, with yoga and meditation and a healthy diet being followed by only one person in our extended (joint) family. But when this person died of a heart attack at an early age, every other member in the family started doubting the benefits of a healthy lifestyle including physical exercise. Even middle class families in India employ people for household chores and our family did the same, contributing to a sedentary lifestyle. Having regular health checks was never a common practice in my family and visits to the doctor was the last option, occurring in situations where the health condition of a family member caused significant concern or in an emergency. Having ‘good health’ was seen more as a reward for being a ‘good’ person who adhered to cultural, familial and religious duties. Therefore it was considered that visits to the doctor were not as important as following religious and cultural traditions.

1.2.2 My understanding and assumptions about CHD

Completing higher education was a priority for my parents and I was lucky to be successful in attaining a medical degree. Subsequently, I worked as a medical officer in a hospital in India for a number of years before migrating to Australia. Based on my educational and professional experience, I have a good understanding of CHD and its associated risk factors. I have also experienced cardiac illness from the perspective of a family member and will discuss this aspect in further detail in chapter three of the thesis. In spite of being aware of
the risks and impact of cardiac illness on the person and the family and having a health degree, I still believe my exercise habits needs to drastically improve. Although I have made some changes to my dietary habits such as increasing my salad and vegetable consumption, the original long-term practices of eating foods rich in sugar and fat, especially at gatherings and religious functions still persists. I can only envisage the difficulties in changing traditional lifestyle habits for majority of Asian Indians who come from different educational backgrounds and may have varied knowledge levels of cardiac illness and its associated risk factors.

My assumptions about CHD have mainly been influenced by my experience as a family member, with my culture and profession shaping these assumptions to a certain degree and are summarised as follows:

- I perceive that an individual's personality type, body constitution, uncontrolled anger and emotions, family history of CHD, and continual stresses play a major contributory role in CHD in addition to lifestyle factors.
- I had a persistent fear of losing my family member (father) after his first episode of acute CHD. This fear existed till the day he passed away (period of 14 years between the first cardiac event and the subsequent one) and was a source of continuous stress for me.
- I believe it is vital for health care professionals to provide information regarding the right dietary and other lifestyle changes to be implemented after an acute episode of CHD. It does not suffice to ask the patient to cut down on salt, sugar and fats. From my personal experience individuals can become very health conscious and make drastic lifestyle changes after experiencing an acute CHD. This can lead to an insufficient or non-consumption of essential nutrients and lead to conditions such as anaemia which in itself could cause subsequent enlargement of the heart and heart failure.
- A majority of Indians are fairly knowledgeable about risk factors for heart disease. However this knowledge exists at a very superficial theoretical level
where people can easily name a number of CHD risk factors. A majority of Indians are not aware of factors such as required levels of daily physical exercise or acceptable amounts of sugar or fat or salt in their diet. Even among those who are aware, the knowledge is not put into practice.

- The everyday Indian diet (from most Indian states) is quite balanced and healthy. In moderation, most Indian foods are healthy. It is important to limit fried snacks and sweets consumed at festivals and social gatherings. Coupled with regular exercise Indian diet is not unhealthy. However, an exercise culture is lacking among most Indians and this needs to change even from childhood. In addition, most Indian foods including a variety of curries, vegetables and lentils can be cooked with very little fat, salt and/or sugar.

- I strongly believe it is essential to maintain good health (physical and mental), which is of benefit to the individual, his/her family and to the society.

- Despite following the right lifestyle practices, if illness occurs, I believe it is something destined to happen and measures must be taken to alleviate the illness. My belief in God and spiritual aspects from my culture help to cope with illness.

- I am reluctant to visit the doctor unless the health situation warrants a doctor’s advice.

- Since I have experienced CHD from the perspective of a family member resident in India, I have no preconceptions about impact of migration on CHD. Also I have not documented my assumptions about my health care experiences since they occurred in Indian context.

1.3 Aims of the study

This study is based on the premise that, if culturally sensitive care and tailored health promotion and prevention programs for CHD are to be delivered in a multicultural society such as Australia (Carstairs, Myors, Shores & Fogarty, 2006; Dunn, 2005; Hughes & Bruce, 2006), it is important to understand the cultural sensitivities and needs of migrants. Given the high risk of CHD amongst
migrant Asian Indians it is essential to obtain comprehensive answers to my following research questions:

- What are the health beliefs, behaviours and risk factor knowledge of migrant Asian Indians in relation to CHD?
- How does migration to Australia affect Asian Indians’ knowledge, beliefs and behaviours in relation to CHD?
- How does being Asian Indian affect a person’s experience of CHD from the perspective of patients and family members?

1.4 Significance of the study
Given the malignant nature, prematurity and high mortality and morbidity due to CHD amongst Asian Indians globally, it is critical to gain a deeper understanding of knowledge, health behaviours and beliefs and experiences of CHD among migrant Asian Indians. It is envisaged that findings from this study will provide new knowledge that will help devise strategies for CHD prevention, ongoing care and rehabilitation amongst migrant Asian Indians. Findings from the study will enhance health professionals’ knowledge and awareness of the subtle aspects regarding CHD amongst Asian Indians, which can make a difference to quality of care and discharge plans and rehabilitation advice for this highly vulnerable group. Finally, it is anticipated that knowledge gained from this study will provide insights that could help inform health care practice internationally and support migrant Asian Indians with CHD worldwide.

1.5 Definition of terms used in this thesis

Asian Indians
The term Asian Indians in this thesis refers to all ethnic Indians and includes all persons born in India, or people of Indian descent or persons of Indian origin. This includes Fiji-Indians, South African Indians, Malaysian Indians or Indians who have migrated to other countries such as Australia, United States of America (USA), United Kingdom (UK), Europe, Canada or any other nation. For
the purpose of this study and this thesis, *Asian Indians* will be referred to as *Indians*.

**Coronary Heart Disease**

Also known as Coronary Artery Disease or Ischaemic Heart Disease and refers to a narrowing of the blood vessels that supply blood and oxygen to the heart (coronary arteries) and usually results from build up of fatty material and plaque. As the coronary arteries narrow, the flow of blood vessels to the heart can slow or stop and cause chest pain, shortness of breath, heart attack or other symptoms (Medical Encyclopaedia, 2003). In this thesis the term *cardiac event* will also be used to refer to CHD.

**Culture**

“The system of shared beliefs, values, customs, behaviours, and artefacts that the members of society use to cope with their world and with one another, and that are transmitted from generation to generation through learning” (Bates & Plog, 1990, p. 7).

**1.6 Layout of the thesis**

The *current chapter* has introduced the reader to the study and provides an overview of the thesis including the study background, aims and research questions and significance of the study.

The *second chapter* of the thesis discusses previously reported research in relation to the issue of CHD amongst Asian Indians worldwide. This chapter attempts to expose the extent of the problem of CHD among Asian Indians and discuss the relevance of this study in the Australian context.

*Chapter three* will detail the research method used to direct this study. The fundamental assumptions of the constructivist paradigm and their application in the context of this study will be elucidated. Methods of data collection and
analysis including ethical considerations will be discussed. In addition, the strategies used to maintain rigor and quality of the research will be discussed in relevant sections of the chapter.

Chapter four will present the joint constructions that emerged from conversations with patients and family members about their CHD experiences. This chapter will also present the study findings in relation to participants’ knowledge of risk factors for CHD.

Chapter five will discuss the study findings in relation to participants’ health beliefs and behaviour in the context of CHD. The impact of Asian Indian culture and migration to Australia on participants’ CHD experience and beliefs, behaviours and knowledge in relation to CHD will also be presented.

Chapter six will discuss the study findings with reference to existing literature and will highlight new knowledge derived from this study.

Chapter seven will summarise the study, present the implications of the study findings for health professionals and discuss the strengths and limitations of the study. Finally, recommendations for future research will be provided.

1.7 Conclusion
This chapter has provided a brief introduction to the study and discussed the layout of the thesis. It was envisaged that this research journey would prove to be an interesting and enriching experience and add to the existing body of knowledge on CHD in migrant Indians.
ABSTRACT: CHAPTER 2

Chapter two presents an analysis of existing literature on the topic of coronary heart disease amongst Indians and the influence of Indian culture on related health beliefs and behaviours. Parts of this literature review have previously been published in a refereed journal article as listed in Appendix 1. Literature suggests that Indians are at an extremely high risk of coronary heart disease and this risk is exacerbated in migrant Indians globally. Coronary heart disease in Indians is premature, has a markedly severe course and is associated with increased morbidity and mortality. The increased risks of coronary heart disease among Indians are attributed to a complex interaction between genetic and environmental factors.

Culture is considered as an integral part of an individual’s understanding and experiences of health and illness. The fundamental principles of Indian culture namely ‘karma’ and ‘dharma’ have shaped the traditional Indian culture, where the majority of Indians attribute health and illness to ‘karma’ and ‘dharma’. Literature reports an unhealthy lifestyle among Indians including unhealthy dietary habits and lack of physical exercise. It is important to include the cultural sensitivities of a group for efficient provision of health care.

A number of psychosocial models of health behaviour are described in the literature and have successfully been applied to change behaviours in the context of coronary heart disease, although their effectiveness have not been determined amongst Indians. However, it is important to understand the cultural specificities and sensitivities of a group before planning any intervention programs for prevention and management of coronary heart disease. Despite the evidence of the burden of coronary heart disease among migrant Indians globally including Australia, there is paucity of qualitative research that has explored the experiences, knowledge, health beliefs and behaviours of migrant Indians in relation to coronary heart disease.
CHAPTER 2: LITERATURE REVIEW

2.1 Introduction
In the previous chapter the significance of this study, my impetus to explore the issue of CHD in Indians and an overview of the contents of each chapter in this thesis were discussed. This chapter, through an extensive literature review, reveals the magnitude of the problem of CHD in Indians; discusses the impact of Indian culture on CHD, elaborates on associated health beliefs and behaviours; identifies risk factors for CHD and factors contributing to an increased risk of CHD in Indians; compares the experiences of CHD amongst Indians and other populations groups globally; and emphasises the relevance of this study in the Australian health care context. Finally gaps in the literature are highlighted.

2.2 Background
Health care providers and cardiac research centres worldwide are confronted with the challenging problem of CHD in Indians (Enas et al., 1996). Indians have a severe and malignant course of CHD, which is not uncommon in those aged below 40 years. CHD in Indians is markedly premature and severe, in comparison to people from Western cultures (Bahl et al., 2001; Enas, 2000; Enas & Senthilkumar, 2001; Kanduri 2003; McKeigue et al., 1993; Sharma & Ganguly 2005).

Generally, immigrant populations in industrialised nations (including Indians) are relatively healthier than their native-born counterparts (Singh & Miller, 2004). However, there is extensive debate in relation to the risk of CHD and other related vascular and metabolic conditions among Indians residing in India and in other countries to which they migrate (Enas, 2000; Malhotra, Kumari, Singh & Varma, 2003; Uppaluri, 2002). Indians have immigrated in vast numbers to various countries worldwide (including the UK, USA, Canada, Australia, New Zealand, Fiji, Malaysia, South Africa, Singapore and
Uganda) in the last 150 years and these numbers have considerably increased in the last two centuries (Mahajan & Birmingham, 2004; Sahoo, 2004). Several epidemiological studies have confirmed that the risk of CHD in Indians, who have immigrated to other countries, is higher in comparison to Indians in their native settings and to other migrant groups (Beckles et al., 1986; Bhopal, 2000; Cappucio, Oakeshott, Strazzullo & Kerry, 2002; Pais et al., 1996; Fox & Shapiro, 1988; Knight, Smith, Whittles, Sahota, Hogg & Bedford, 1992; Kulkarni, Markovitz, Nanda & Segrest, 1999; McKeigue & Marmot, 1988; McKeigue, Miller & Marmot, 1989; McKeigue & Sevak, 1994; Smage, 1994; Shaukat & de Bono, 1994; Sheth, Nair, Nargundkar, Anand & Yusuf, 1999; Wetter et al., 2001; Wilkinson et al., 1996). If uncontrolled, this epidemic of CHD in Indians will thwart universal control of cardiovascular diseases (Yusuf, Reddy, Ounpuu & Anand, 2001).

2.3 Sources of literature
A literature search was conducted by using electronic databases, World Wide Websites and hand searching of journals and books as information sources. The databases accessed electronically included, MEDLINE, PsychINFO, Blackwell Synergy, Current Index of Nursing and Allied Health-CINAHL, Expanded Academic Index, Multicultural Australian and Immigration Studies, Google Scholar and Cochrane Reviews, to identify published literature in relation to CHD in Indians. World Wide Web sites assumed to provide reliable information, such as the official websites of the World Health Organisation, Ethnic Studies Database and research foundations were also accessed. Australian Government reports published online from Australian Bureau of Statistics (ABS), Australian Institute of Health and Welfare (AIHW) and New South Wales (NSW) Health were also included. The key words used for the literature search included: Indians, coronary heart disease, risk factors, epidemiology, Indo-origin people, South Asians, culture and ethnicity, Indian culture, cardiac illness experience, health attitude and health behaviour. This literature search was limited to articles that were written in English.
Before discussing the literature in relation to CHD in Indians, I wish to provide to the reader a broad overview of literature pertaining to Indian culture and discuss its influence on understanding and experiences of CHD in Indians. An overall understanding of the Indian culture is vital to interpret CHD related health beliefs and behaviours, knowledge of CHD risks and CHD experiences among Indians. Initially I will discuss culture, its influence on health and illness and CHD in more general terms and then focus specifically on Indian culture.

2.4 Influence of culture in the context of CHD
This section will initially discuss the concept and meaning of culture, its impact on health and illness, the relevance of culture in the context of CHD and a brief overview of cultural competence in health care and its emerging importance in the Australian scenario.

2.4.1 Culture: Its meaning and concept
The definition of the term culture (Bates & Plog, 1990) has been presented in chapter one under section 1.5. Similarly, Knott (2002) in his definition of culture, recognises the importance of cultural symbols as being passed on from one generation to the next: “A system of symbols of a social group, which are shared, learned, and passed on from generation to generation” (Knott, 2002, p. 22). However, Anderson (2003, p. 22) focuses on patterns of human behaviour and (2003, p. 68) defines the term culture as “Integrated patterns of human behaviour that include the language, thoughts, communications, actions, customs, beliefs, values and institutions of racial, ethnic, religious, or social groups”.

Culture influences the way people perceive and conceptualise the world around them and facilitates their decision-making. Culture stipulates what behaviours are acceptable in any given society (Doorenbos & Nies, 2003). Further, it helps people to guide their interactions with each other. It is a process that can be subtly different in each person and can change over time (Doorenbos & Nies, 2003; Knott, 2002). Although traditionally the word
culture is associated with specific ethnic groups it can also be associated with specific religious groups (Doorenbos & Nies, 2003).

2.4.2 Culture: Its influence on health and illness

Culture is considered as an integral part of an individual’s experience and understanding of health and illness (Cook, 1994; Daly et al., 2002; Furnham, Akande & Baguma, 1999; Jobanputra & Furnham, 2005; Keller & Stevens, 1997). Culture is regarded as the foundation of a person’s health beliefs and informs how illness experiences are perceived and experienced (Farr & Markova, 1999; Furnham et al., 1999). Therefore, culture and ethnicity are described as factors that construct meanings and beliefs of health and illness amongst individuals. Cultural factors thus create a distinctive pattern of beliefs and perceptions among people as to what health and illness actually mean (Anderson et al., 2003). These constructed beliefs influence the recognition and interpretation of illness symptoms and perceptions of contributory factors and the manner in which individuals and groups seek and receive health care (Anderson et al., 2003).

Literature dating back to 1950s report on cultural differences in the identification and interpretation of disease symptoms and in the use of health services (Anderson, Wood & Sherbourne, 1997; Berkanovic & Telesky, 1985; Doorenbos & Nies, 2003; Hayes-Bautista, 1978; Jobanputra & Furnham, 2005; Suchman, 1965; Xuequinn & Henderson, 1999; Zaborowski, 1952). Impediments in seeking health care are reported among individuals belonging to cultural groups (e.g. Indians, Vietnamese, Chinese) that are characterized by ethnic exclusivity, traditional family authority, and high skepticism about Western medicine (Anderson et al., 2003).

People’s conceptions of health and illness are influenced by their experiences in their country of origin as well as those in the country to which they migrate (Wynaden et al., 2005). The beliefs in long-established cultures are described as deep-rooted and more structured than in many Western societies (Shiekh & Furnham, 2000). Within each culture, response to illness and its treatment methods have their own cultural meanings (Burr &
Chapman, 1998) and belief systems, which establish how individuals respond to illness. Some cultures (e.g. Egyptian culture, Indian culture) attribute their health status to spiritual or supernatural causes. This is significantly different to the bio-medical model of Western cultures that believe in predominantly scientific and pathological illness aetiology (MacLachlan, 1997; Wynaden et al., 2005). Dalal (2000) describes health beliefs of majority of people from Indian culture as holistic as the belief system incorporates physical, psychological, social and supernatural aspects. Although Indians tend to follow traditional health practices in conjunction with bio-medical treatment, they are reluctant to discuss their health care practices with health professionals for the fear of stigmatisation and perceived lack of sensitivity of health care professionals (Hilton et al., 2001). These traditional health beliefs are retained by majority of Indians subsequent to migration (Jobanputra & Furnham, 2005).

2.4.3 Relevance of culture: Context of CHD

Disparities in cardiovascular health including inequality in prevention, treatment and control of cardiac illness are identified as a grave public health problem, particularly in multicultural societies and developed nations (Mensah, 2005). The pervasive nature of these disparities, and the convincing evidence of the adverse impact they have on cardiovascular clinical outcomes and quality of life are consistently documented in the literature (Institute of Medicine, 2003; Lillie-Blanton, Maddox, Rushing & Mensah, 2004; Mensah, 2005). Cultural beliefs and lifestyle practices are important determinants of these disparities (Smedley, Stith & Nelson, 2002). However these disparities result in unjustifiable individual and societal costs for a number of population subgroups that are defined by ethnicity, culture, gender, socioeconomic status and rural or urban residence (Anderson et al., 2003; Mensah, 2005; Smedley et al., 2002; Wong, Shapiro, Boscardin & Ettner, 2002).

Even with the most precise diagnosis of cardiac illness, failure to focus on sociocultural factors that influence patient compliance may result in inefficient treatment or bleak prospects of follow up (Ahmed & Lemkau, 2000). It has
been argued that existing strategies for CHD prevention are based on recognised epidemiological risk factors (Davison, Smith and Frankel, 1991; Chyun, Amend, Newlin, Langerman, & Melkus, 2003) without taking cultural aspects into consideration. The fact that individuals belong to a wider social and cultural context is often neglected (Murray, Manktelow & Clifford, 2000; Wong & Wong, 2003) in cardiac prevention and rehabilitation programs. Hence CHD prevention approaches disregard the explanations derived from cultural concepts, where occurrence of CHD is blamed for misfortune labelled as ‘luck,’ ‘fate’ ‘karma’ or ‘destiny’. Therefore the provision of culturally competent information and education is necessary to ensure CHD prevention strategies such as regular cholesterol screening and periodic Type 2 diabetes screening (Levy & Gardner, 1999). In addition, cardiac rehabilitation programs are mainly directive in nature and fail to focus on personal, social and cultural aspects of lifestyle (Murray et al., 2000). Therefore these programs have demonstrated non-compliance with patients and high relapse rates of previously established lifestyle and behaviour (Lip, Malik, Luscombe, McCarry & Beevers, 1995; Murray et al., 2000).

Social and cultural factors form the basis of patients’ and carers’ perceptions of cardiovascular risk factors with social networks being the main source of information about cardiovascular risks (Mosca et al., 2000; Murray et al., 2000). As stated by Kai, Spencer, Wilkes and Gill (1999) a large amount of research has shown that a person’s culture has an enormous influence on how he/she seeks and receives health care. This has implications for Indians in the context of seeking acute medical care for cardiac emergencies and also in cardiovascular health promotion programs.

The concept of cultural construction of health and illness in relation to CHD is described by Davison et al. (1991) where participants in their study used terms such as fate, destiny, lucky and unlucky to describe the occurrence of a cardiac event. For example, when individuals died of acute CHD at a young age, despite following a healthy lifestyle, they were labelled as ‘unlucky’ and their death was ascribed to ‘bad luck’. Those who were identified as high risk for CHD, but survived to old age with no cardiac event
were identified as being ‘lucky’ (Davison et al., 1991). In a similar study (Murray et al., 2000), patients with myocardial Infarction (MI) and their carers believed that ‘fate’ or ‘predestination’ was contributory to MI. This strong belief in fate could act as a barrier for CHD prevention and cardiac rehabilitation programs and is of relevance to Indians who have similar beliefs (Dalal, 2000) and this will be discussed in detail in section 2.5.2.

2.4.4 Cultural competence in health care

Health disparities can be alleviated by creating and sustaining health care systems that are culturally competent (Anderson et al., 2003; Campinha-Bacote, 2003). Cultural competence is considered an integral part of quality health care as it has the potential to improve health outcomes, increase efficacy of clinical and support staff and consequently enhance client satisfaction with health services (Atri et al., 1997; Baldwin et al., 1996; Brach & Fraser, 2000; Johnstone & Kanitsaki, 2005; Naish, Brown & Denton, 1994). Cultural and linguistic competence in health care is defined as "A set of congruent behaviours, attitudes and policies that come together in a system, agency or amongst professionals and enables that system, agency or those professionals to work effectively in cross-cultural situations" (Cross, Bazron, Dennis, & Isacs, 1989, p. 4). The goal of culturally competent care is to ensure the provision of appropriate health care services and reduce the misinterpretations caused by cultural differences, thereby reducing needless diagnostic testing or inappropriate use of services (Anderson et al., 2003).

The process of cultural competence as described by Campinha-Bacote (2002), includes: cultural desire (the desire to be engaged in the process of becoming culturally competent, as this desire evokes the entire process of cultural competence), cultural awareness (is an in-depth exploration of one’s own culture), cultural knowledge (process of seeking and obtaining information about diverse cultural and ethnic groups), cultural skill (the ability to collect relevant cultural data in relation to the patient’s presenting symptoms and in accurately performing a culturally based physical assessment) and cultural encounters (the process of engaging in face-to-face interactions with patients from diverse cultural backgrounds). Although
this applies to all health care professionals, ensuring cultural competence in care is of particular relevance to nurses due to the nature of their profession where they play a major role in caring for patients. In relation to CHD a number of lifestyle behavioural factors are influenced by an individual’s culture. Modifications to certain behavioural factors decrease the risks of CHD and in order to achieve this, cultural competence in care is an essential requirement for CHD risk prevention, management and improved health outcomes (Lasater, Davidson, Steiner & Mehler, 2001; Washington State Department of Health, 2004).

It is also argued that even though culture is a shared characteristic, individuals within a cultural group can have varying levels of some cultural beliefs. For example, if spirituality is a major constituent of a given cultural group, some individuals in that culture are inclined to be more spiritual than others. Although spirituality may not necessarily mean the same to all members of the particular cultural group, it is an understanding of the role and importance of spirituality that is shared by all members of the group (Kreuter et al., 2003). This aspect gives rise to the need for cultural tailoring (Kreuter, Bull, Clark & Oswald, 1999; Kreuter et al., 2003) of health care programs which focuses on an measuring an individual’s needs from a particular culture (Goldsmith, 2000; Michielutte, Sharp, Dignan & Blinson, 1994) keeping in mind the characteristics of the cultural group. However, the cost effectiveness of culturally tailored programs needs further evaluation (Kreuter & Skinner, 2000).

Despite the multicultural nature of Australian society (Carstairs et al., 2006; Dunn, 2005; Hughes & Bruce, 2006), the health care system in Australia remains largely monocultural and mainly caters to people from Anglo-Australian backgrounds, thereby disadvantaging people from non-English speaking backgrounds (Orb, 2002). Orb & Wynaden (2001) report that many migrants in Australia perceive accessing health care services as a stressful experience. In a health care system, which remains culturally insensitive, illness morbidity remains hidden within cultural groups (Gorman, Brough & Ramirez, 2003). Migrants in a multicultural society such as Australia come
from a broad range of communal, cultural and linguistic backgrounds and have various insights into illness and health. Both health and illness are culturally constructed experiences (Engebretson, 2003; Manderson, 1990) and therefore it is obligatory to include the cultural sensitivity of these groups for efficient provision of culturally appropriate and holistic nursing and health care (Allotey, Manderson & Reidpath, 2002; Daly et al., 1998; Murray & Skull, 2005; Orb & Wynaden, 2001; Proctor, 2004). In addition, previous studies have demonstrated that health care is received more efficiently when delivered in a culturally competent manner (Atri et al., 1997; Baldwin et al., 1996; Naish et al., 1994).

According to the 2001 Australian census (ABS, 2004), 36% of Australia’s population reported Australian ancestry followed by English (33.9%), Irish (10.2%), Italian (4.3%) and German (4%) ancestries. Common non-European ancestries reported were Chinese (3%), Lebanese (0.9%), Indian (0.8%), Vietnamese (0.8%) and Filipino (0.7%) indicating the multicultural composition of Australian society. Therefore as discussed in the previous paragraph a culturally sensitive approach to health care is the most valuable way to deliver health care in a culturally diverse society (Knott, 2002) such as Australia. This is particularly important in the context of CHD given the burden of cardiovascular disease in Australia (National Heart Foundation, 2004).

2.5 Indian culture and CHD
This section will discuss the role of Indian culture in the context of CHD. The following sub-headings presented in Table 1 are used to describe aspects of Indian culture that could influence the CHD experience and associated health beliefs and behaviours:
Table 1: Influence of Indian culture on CHD

<table>
<thead>
<tr>
<th>Aspects of Indian culture influencing CHD</th>
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<tbody>
<tr>
<td>• A passage to India: An Introduction to the Indian culture</td>
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<tr>
<td>• Indian culture: Its' core principles</td>
</tr>
<tr>
<td>• Cultural construct of pain and suffering: The Indian context</td>
</tr>
<tr>
<td>• Family structure and entrenched family values amongst Indians: The Collectivist Orientation</td>
</tr>
<tr>
<td>• The drive to succeed: Of paramount importance to Indians</td>
</tr>
</tbody>
</table>

2.5.1 A passage to India: An Introduction to the Indian culture

India, the abode of one billion people - home to one sixth of the entire world population, is described as a nation with a multitude of subcultures, (American Public Health Association, 2002). There are 28 States and seven Union Territories in India with each State and Territory following its own language and subculture (The World Factbook, 2006). Dating back to over 5000 years, India’s culture is immensely diverse. Despite this diversity it presents a picture of ‘harmony in diversity’. Its physical, religious and racial variety is as vast as its linguistic variety. India is the birth place of many major religions such as Hinduism, Buddhism, Sikhism and Jainism, which have a strong prevalence and influence not only over India but also over the whole world (Indian Mirror, 2002). In addition, people who follow other religions such as Islam, Christianity, Judaism, and Baha’i faith form significant minority groups in India. Although every state in India has its own cultural niche, there are common threads in features such as style of dress, patterns of social interaction and food habits (e.g. Ministry of External Affairs, [MEA] India, 2002) and in spite of its marked diversity the whole country is bound as a civilisation, thereby preserving the national identity.

2.5.2 Indian culture: Its’ core principles

The two main principles of Hinduism, namely ‘karma’ and ‘dharma’ have shaped the constitution of the long-established Indian society and Indian culture (Doorenbos & Nies, 2003; Kalman, 1990). Although the tenets of
**dharma** and **karma** are derived from Hinduism which is the main basis of Indian culture, their principles are entrenched among all Indians irrespective of the religion they follow. This is particularly true for those who follow Buddhism, Jainism and Sikhism.

The Himalayan Academy (2006) describes Hinduism as a way of life and a culture that is both religious and secular. A large number of non-Hindus in India and worldwide believe in **karma**, **dharma** and re-incarnation and strive to see God everywhere (Himalayan Academy, 2006). According to the philosophy of **karma**, every action has effects on present and future lives. For example if someone performs a good deed, something good happens to them in return, and if someone does wrong, something bad is destined to happen. Thus the doctrine of **karma** instructs that all experiences in life are the rewards or punishment of past actions. ‘**Karma**’ is a significant and persistent belief among Indians (Adiswarananda, 1991; Francis, 1986; Kolanad, 2000; Laungani, 1997).

Indians attribute illness to the principles of ‘**karma**’ and God’s will (Dalal, 2000). The principles of **karma** are related to the belief that life, death, illness and suffering are in God’s hands. Therefore illness and suffering are to be accepted as part of one’s **karma**. If an individual is destined to suffer from illness then it is God’s will, his/her fate and something that cannot be prevented. This is particularly important in the context of CHD where lifestyle intervention could reduce CHD risks. However, with the belief in principles of ‘**karma**,’ Indians may assume that CHD is not preventable.

Hindus expect to break the cycle of reincarnation by achieving freedom from rebirth (Karnik & Suri, 1995; Neuberger, 1998), often termed ‘**moksha**’ or ‘**mukti**’ and ultimately get liberation from suffering. In order to obtain this state of eternal peace, Hindus follow the law of ‘**dharma**’, which enunciates that individuals must perform all duties required by their positions in life (Kalman, 1990) which includes being a child, a student, a spouse, a parent and a grand parent and also in their paid employment. Dalal, Pande, Dhawan & Dwijendra (2000) found that rural Indians hospitalised with various
disabilities, often attributed fate, God’s will and karma for their disability. Similarly in a study by Dalal (2000) that explored causal beliefs of patients hospitalised in India for treatment of coronary heart disease and cancer, the patients believed that their health problem was due to their karma. Dalal (2000) also discovered that attribution of disease to karma helped patients with their psychological recovery.

2.5.3 Cultural construct of pain and suffering: The Indian context

Culture is a key factor in the construct of pain sensation (Callister, 2003; Pugh, 1991). In the Indian culture, entire webs of beliefs are centred on the experience of pain, including the certainty of its occurrence and virtues of both endurance and transcendence – a state of being beyond normal limits (Pugh, 1991). However, there is no recent literature to support this. A study by Yosipovitch, Meredith, Chan and Goh (2004) suggests no significant differences in pain threshold between different races and genders. Tolerance to pain could be high amongst Indians and attributed to ‘karma.’ This tolerance to pain might significantly delay an Indian person from seeking medical attention for chest pain or angina.

The belief in ‘karma’ also shows the ubiquitous belief in fatalism, the certainty that there is minute control over one's fate. Pain and suffering, then is to be acknowledged and endured with stoicism as an acceptance of one's destiny. This is a sentiment felt by most Indians in general (Kolanad, 2000, Pugh 1991) and is also due to the fact that individual health needs and concerns are not considered as major issues in comparison to family issues and needs. This aspect is elaborated in the following section 2.4.4.6. Therefore lack of attention to individuals’ beliefs and hopes may gravely undermine patients' compliance with seeking health care and following health care advice offered by professionals (Murray et al., 2000).

2.5.4 Family structure and entrenched family values amongst Indians: The Collectivist Orientation

The Indian social system is predominantly based on the Joint Family System where families are closely knit with family members including grandparents,
parents, children and grandchildren sharing the same spirit, tradition and
property (Indian Mirror, 2002). The Joint Family System may still exist in
migrant families either partially or in full. This may include either
grandparents living with the family or two or more brothers and their families
living in the same house. The Joint Family System could therefore provide
support with childcare for working families and also help families to gain
wealth through the pooling of resources. However with this system, there is
also the possibility of added financial commitments for an individual which
could contribute to stress.

The Indian culture is described as a highly collectivist and interdependent
culture which embeds a strong sense of ‘We’ a common collectivist
orientation, which affects the family structure. There is a great emphasis on
harmony and tolerance within family relationships in Indian culture (Hofstede,
Sinha, 1990, Sue & Sue, 1999). This includes strong family ties and
existence of extended family, a patriarchal family structure and a sense of
family pride/shame from the consequences of a particular behaviour (Ahmed
& Lemkau, 2000; Sue, 1998). Maintaining traditional family values with a
major emphasis on obedience to elders, arranged marriages and
discouragement of autonomy in the young (Bhattacharya & Schoppelrey,
2004; Jonnalagadda & Diwan, 2005; Patel et al., 1996; Sue, 1998) are also
common among Indians.

The sense of duty and familial responsibility and commitment to one’s
parents and extended family is very strong. Family needs are prioritised over
individual needs and emotional restraint is encouraged to maintain family
harmony (Ahmed & Lemkau, 2000; Hofstede, 1998). Conflict and tension in
Indian families are expected to be alleviated by restraining one’s own desires
and being more practical and sensible to fulfil the needs of the family (Ahmed
& Lemkau, 2000; Miltiades, 2002). Indians generally maintain strong
precincts outside the extended family (Das & Kemp, 1997; Rastogi &
Wampler, 1998). Family affairs are not discussed with outsiders and taking
family matters outside is regarded as reducing the ‘honour’ of the family.
As a consequence, Indians most often do not obtain counselling or psychotherapy. Sheth (1995) reported that Indian immigrants in the US had the lowest divorce rates (2%) in comparison to any other community group and this could be due to the sense of disgrace associated with divorce by Indian families (Rastogi & Wampler, 1998).

Parenting amongst Indians relies on the entrenchment of disgrace and guilt for wrong doing, with children being taught the value of family obligations and importance of bringing credit and honour to the family by their educational or occupational successes. To the contrary, problems of delinquency, drugs or mental health problems are seen as cause of great embarrassment for the whole family (Ahmed & Lemkau, 2000). These deep-rooted values are reported to profoundly affect a patient’s recognition of health problems and receptiveness to recommended treatments (Ahmed & Lemkau, 2000).

2.5.5 The drive to succeed: Of paramount importance to Indians

The desire to be successful educationally and financially is paramount in Indians, particularly migrants. Indians have been described as achievement-oriented, motivated, ambitious and materialistic people, who place strong emphasis on individual success (Ahmed & Lemkau, 2000; Patel et al., 1996). The majority of Indian migrants to the United States are reported to be well educated with more than 60% holding Bachelor’s degrees (Ahmed & Lemkau, 2000; Visaria & Visaria, 1995), with a significantly high median income (Jonnalagadda & Diwan, 2005; United States Census Bureau, 2003). Similarly, in Australia over 54% of Indians had a bachelor’s degree or higher and 93.4% were reported to be proficient in English (ABS 2001).

Being in a well-paid job is extremely important for Indians as it helps keep their families comfortable. For most Indians, needs of the family is a priority and even health problems cannot overtake this priority. On migration, work therefore takes a priority over health education and health promotion behaviours (Misra & Gupta, 2004). Moreover, these migrants recurrently experience pressure from their extended families and also from their family members in India, to achieve further educational and financial success.
These pressures compound the existing stress of migration (Ahmed & Lemkau, 2000).

2.6 CHD in Indians: An analysis of existing literature

CHD in Indians is characterised by a striking prematurity and early onset at ages less than 40 years (Enas 2000, Fox & Shapiro 1988, Mammi, Pavithran, Rahiman, Pisharody & Sugathan 1991, McKeigue & Marmot 1988) with many Indians having heart attacks even as early as their mid thirties (Holden, 2003). This increased risk of CHD in migrant Indians has been consistently established in a number of research studies dating back to the 1950s, including those in Europe (Balarajan, Aldelstein, Bulusu & Shukla, 1984; McKeigue & Marmot, 1988), Africa (Sharper & Jones, 1959; Walker, 1961), America (Wattley, 1959), the Caribbean (Miller et al., 1982) and even in other parts of Asia outside the Indian subcontinent (Olusi, Prabha & Sugathan, 1999). Through an extensive and critical review and analysis of available literature, this section will discuss the following issues in relation to Indians and CHD, as represented in Table 2:

Table 2: Findings from the literature

<table>
<thead>
<tr>
<th>Representation of findings from the literature</th>
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<tbody>
<tr>
<td>• Incidence of CHD and associated mortality and morbidity in Indians globally</td>
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<tr>
<td>• Risk of CHD in Indians</td>
</tr>
<tr>
<td>• Lifestyle practices, health beliefs and behaviours in relation to CHD</td>
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<tr>
<td>• Lifestyle practices, health beliefs and behaviours of Indians in relation to CHD</td>
</tr>
<tr>
<td>• Knowledge of CHD risks among Indians</td>
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<tr>
<td>• The CHD experience in Indians</td>
</tr>
<tr>
<td>• Impact of migration and acculturation</td>
</tr>
<tr>
<td>• The relevance of this current study in the Australian context</td>
</tr>
</tbody>
</table>
2.6.1 The incidence of CHD in Indians globally and associated mortality and morbidity from CHD

The earliest indication of increased CHD rates in Indians came from Singapore in 1959 and this has been confirmed by similar findings from South Africa and Trinidad (Danaraj, Acker, Danaraj, Ong & Yam, 1959; Miller et al., 1982; Wyndham, 1982). An analysis of national data for England and Wales during the period 1970-1972 established that the standardised mortality rate for CHD was significantly higher in Indian men and women in comparison to other population groups (McKeigue & Marmot, 1988). In this analysis, the researchers used surnames on death certificates to identify Indians and others Asian groups. Therefore this approach used by McKeigue and Marmot (1988) has methodological limitations and may consequently affect the reliability and validity of their results.

An analysis of hospital admission data for National Health Service Hospitals at Leicester during 1977 and 1978 reported that Indo-origin people were 40 times more likely to have myocardial infarction compared to Caucasians (Donaldson & Taylor, 1983). The results of this analysis are also not reliable as Donaldson and Taylor (1983) also identified their sample on the basis of surnames.

CHD in Indians occurs at least a decade or two earlier than seen in Caucasians (Hughes, Raval & Raferty, 1989). Hospitalisation rates for Indians with CHD are reported to be four times higher in comparison with people from Western cultures and six times higher than the Chinese population as reported by various studies (e.g. Enas, 1998; Klatsky, Tekawa, Armstrong & Sidney, 1994).

The death rate for CHD is 36% higher among Indian men and 46% higher for Indian women in UK as compared to the rest of the UK population (British Heart Foundation, 1997). Compared to Caucasians, patients of Indian subcontinent origin have poorer survival after first myocardial infarction (Shaukat et al., 1997). Chaitman et al. (1990) reported that patients from the Indian subcontinent had a significantly higher proportion of triple vessel
disease, implying poor prognosis, when compared to matched controls with Caucasians (54% versus 21%, \( p < 0.0001 \)), indicating a need for coronary bypass grafting. As this study by Chaitman et al. (1990) was conducted about 17 years ago the reliability and applicability of their results in the current situation remains uncertain.

### 2.6.2 Risk of CHD in Indians

Amongst all ethnic groups migrant Indians have the highest prevalence of CHD (Enas, 2000). The risk of CHD in Indians is 3-4 times higher than Caucasians. Indians and Chinese are at the opposite end of the CHD gamut, with the former having the highest and the latter having the lowest rates of CHD (Coronary Artery Disease among Indians [CADI] Research Institute, 2002; Lee et al., 2001; Mak et al., 2003).

The risk of CHD in Indian women is even greater than Indian men. Although Indian women develop CHD about 10yrs later than Indian men, they have a higher death rate in comparison to women from all other ethnic origins (CADI Research Institute, 2002; Enas, Senthilkumar, Juturu & Gupta, 2001). Globally, the risk factors for CHD are classified as either modifiable (independent) or non-modifiable (conventional) and newly emerging risk factors. In Indians, clustering of many cardiovascular risk factors is reported to be higher in comparison to people from Western cultures (Ferdinand, 2005; Rao, Govindaraju & Manjunath, 2007).

The conventional risk factors for CHD, such as hypertension, high cholesterol, smoking and obesity do not fully explicate the increased incidence of CHD amongst Indians (Hughes et al., 1989). CHD may occur in Indians despite the absence of conventional risk factors such as hypercholesterolemia (Luthra et al., 2002). The excess risk of CHD is seen in both men and women although smoking is low amongst Indians (Enas, 2000; Jonnalagadda & Diwan, 2005) and smoking is almost nonexistent among Indian women (Enas 2000). The lower rates of smoking in Indians are juxtaposed against higher cholesterol levels, unfavourable cholesterol ratios, central obesity and high prevalence of Type 2 diabetes among Indian
immigrants in comparison to either native-born or other foreign born population groups (Malhotra, Singh, Kumar & Kumari, 1996; Blackledge, Tomlinson & Squire, 2003). The various risk factors for CHD and references to studies that have reported these risk factors among Indians are represented in table 3:

Table 3: Risk factors for CHD

<table>
<thead>
<tr>
<th>Risk type</th>
<th>Risk Factors</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Modifiable (independent) risk factors</td>
<td>Gender, Age, Ethnicity, Family history of heart disease, Geographic location</td>
<td>(Bahl et al., 2001; Enas et al., 1996; Hawe, Talmud, Miller &amp; Humphries, 2003)</td>
</tr>
<tr>
<td>Modifiable (conventional) risk factors</td>
<td>Uncontrolled high blood pressure, Uncontrolled Type 2 diabetes, High cholesterol, Obesity, Reduced physical activity, Smoking, Personal response to overall stress levels</td>
<td>(Bahl et al. 2001; Pais et al., 1996, Yeolekar, 1998)</td>
</tr>
<tr>
<td>Newly emerging risk factors</td>
<td>Low birth weight, Folate deficiency, Raised plasma homocystine levels, Elevated serum lipoprotein (a) levels, Bacterial and viral infestations</td>
<td>(Enas &amp; Senthilkumar 2001; Rao et al., 2007; Yeolekar, 1998)</td>
</tr>
</tbody>
</table>

The risk of CHD in relation to Indians will be discussed under the following subheadings depicted in Table 4:
Table 4: Risk of CHD in Indians

CHD risks and Indians

- Genetic susceptibility of Indians to CHD
- Insulin resistance syndrome in Indians
- Role of risk factors for heart disease in Indians
- Strategies to reduce risks of CHD in Indians

2.6.2.1 Genetic susceptibility of Indians to CHD
CHD is described to occur as a consequence of a complex interaction between environmental and genetic factors. Genetic variation has a multiplicative effect on lifestyle factors for heart disease risk (Enas & Senthilkumar 2001; Tai & Tan, 2005). The extra risk of CHD in Indians is due to a genetic vulnerability (Enas & Senthilkumar 2001; Bahl et al., 2001). Elevated Lipoprotein (a) levels and associated high levels of low density lipoprotein (LDL) are reported among Indians (Bahl et al., 2001; Holden 2003). Higher levels of Lipoprotein (a) have been associated with CHD and this risk is further enhanced if there is a concomitant elevation of LDL levels. Levels of Lipoprotein (a) are largely genetically determined by apolipoprotein C3 gene which regulates triglyceride metabolism (Holden, 2003) and atherogenic LDL levels and this genetically predisposes Indians to CHD. This genetic predilection to CHD results in Indians being more susceptible to the detrimental effects of modifiable lifestyle risk factors such as unhealthy diet, inadequate physical exercise, high blood pressure, high cholesterol, Type 2 diabetes, lack of regular health checks, stress and cigarette smoking and alcohol consumption (Anand et al., 1998; Cappucio, Cook, Atkinson & Strazzullo, 1997; CADI Research Institute, 2002; Enas & Senthilkumar 2001, Singh & Sen 2003).

2.6.2.2 Insulin resistance syndrome in Indians
A number of risk factors for CHD in Indians related to metabolic syndrome (insulin–resistance syndrome) are described in the literature. This includes
an excess of Type 2 diabetes (Ramachandran et al., 2001), increased upper body obesity with increased waist to hip ratio, (McKeigue, Shah & Marmot, 1991), elevated plasma insulin (hyperinsulinaemia), and increased insulin resistance (Laws et al., 1994). In addition factors such as atherogenic dyslipidemia, elevated blood pressure, pro-thrombotic state and pro-inflammatory state influence risk of CHD in Indians (Enas, 2002; Mahajan & Bermingham, 2004). An observational study by Wilkinson et al. (1996), that compared mortality among 149 South Asian and 313 Caucasian patients admitted with acute myocardial infarction between December 1988 to December 1992, reported that South Asians (including Indians) living in Britain had a higher mortality from CHD in comparison to Caucasians. In addition the study also reported that susceptibility to Type 2 diabetes among South Asians was considered as an important contributor to risk of CHD. Insulin resistance syndrome is exacerbated by central obesity (Chamber et al., 2001).

Hodge et al. (1996) conducted a comparative study on abdominal fat distribution and adverse cardiovascular risk profile among Asian Indians (n=4394), Chinese (n=425), Creole (n=1746) in Melbourne, Australia, after controlling for factors such as body mass index. Hodge et al. (1996) concluded that it was the susceptibility of Indian people to abdominal obesity that contributed to their higher level of risk for CHD. The results of this study are significant although more comparisons would have strengthened the study by including people from other population groups such as Australians and European migrants. The excess risk of Type 2 diabetes in Indians is associated with a body composition that includes excess fat in the abdominal region with poor skeletal muscle and this phenotype is present from birth and is influenced by both genetic and environmental factors, particularly maternal health before and after pregnancy (Yajnik, 2002). Increased body-mass index in Indian patients has been emphasised in the literature (Hughes et al., 1989; Hughes et al., 1990; McKeigue et al., 1993).

As described by Neel (1962), the gene pool in general, has been reasonably consistent over the past 100 to 200 years although the environment and
lifestyle have changed. Indians may have the thrifty genes (Barker, 1995; Hales & Barker, 1992; Neel, 1962; Yajnik, 2004), a group of genes which enabled them to thrive during centuries of living as hunters or farmers on relatively small amounts of food, thereby being able to survive periods of drought and famine. Nevertheless the new generation of migrant Indians live in societies where food is not only readily available but is high in fats and kilojoules. In addition current desk jobs do not require as many calories as hunting or farming or other activities that were required for an existence in the past. Therefore Indians gain weight much more easily and then develop Type 2 diabetes and hypertension and are at increased risk for heart disease (Neel, 1962; Yajnik, 2002).

2.6.2.3 Role of risk factors for heart disease in Indians

Central obesity, atypical lipid profile (high triglyceride, high 'low density lipoprotein' and low 'high density lipoprotein' cholesterol) and genetically elevated levels of lipoprotein (a) result in a lethal lipid tetrad unseen in any other population (Enas & Senthilkumar, 2001; Yeolakar, 1998). Indians have a dual threat from nurture and from genetic factors. Nature has provided Indians with high levels of Lipoprotein (a), low levels of high-density lipoprotein (HDL) cholesterol levels, high rates of glucose intolerance and a predisposition for abdominal or central obesity. The peril from nurture is through an unhealthy life style coupled with prosperity and mechanisation (Anand et al., 1998; Gambhir, Kaur, Gambhir & Prabhu, 2000).

When numerous risk factors for heart disease co-exist, it results in an exaggerated risk, which is multiplicative rather than additive. Therefore each of the risk factors not only confers an increased risk individually but also acts synergistically to further enhance the risk (Ferdinand, 2005; Reddy, 1998). For example, a smoker with modest elevation of cholesterol and blood pressure is considered to be at greater risk of coronary death than a non-smoker with severe hypertension or marked hypercholesterolaemia (Reddy 1998). The manifestation of such multiplicative risk has given rise to the concept of “comprehensive cardiovascular risk” or “total risk”, quantifying an individual’s overall risk of developing cardiovascular disease, resulting from
the convergence of risk factors. This aspect is mainly relevant in the Indian context where Indians are subject to “total risk” for CHD, due to the clustering of risk factors among Indians (Bahl et al., 2001).

2.6.2.4 Strategies to reduce risks of CHD in Indians

The role of lifestyle modification in the prevention and treatment of CHD in Indians is significant (Castelli, Anderson, Wilson & Levy, 1992). The literature highlights the importance of health care professionals having an awareness of patient’s attitudes to and knowledge of potential disease in order to undertake effective health promotion (Farooqi, Nagra, Edgar & Khunti, 2000). It is envisaged that effective prevention is possible when health promotion advice is culturally sensitive, accessible and relevant for the target population (Farooqi et al., 2000; Gupta, De Belder & Hughes, 1995). As highlighted by Farooqi et al (2000) for many patients it may not be enough to advise on changing diet - there is also a need to provide culturally specific advice on healthy cooking methods.

There is good evidence that both primary and secondary prevention can be effective in reducing mortality and morbidity from CHD (Farooqi et al., 2000). However, for health promotion advice to be culturally sensitive and accessible and relevant for the target population, health professionals need to be aware of the knowledge of and attitudes of patients to potential disease. Given the fact that the traditional Indian diet contains a lot of sugar, fat and salt (Ahmed, 1999), dietary changes in conjunction with exercise may be a potential approach for preventing the syndrome of insulin resistance and central obesity reported among South Asians by Farooqi et al. (2000).

High-risk primary prevention is achieved through early determination of emerging and conventional risk factors. Individuals identified to be at high risk, as determined from a positive family history of CHD should be targeted for maximum lifestyle changes as early as possible, preferably in childhood (Enas, 2000). Interventions such as regular exercise, low fat diet, tobacco abstinence and maintenance of ideal body weight and waist circumference are aimed at lowering the risk factors at the individual level (Enas, 2000).
Population based strategies aim to lower the risk factors in the entire population through lifestyle modifications, which can create a new generation in which low-risk is the rule and high-risk the exception. Most importantly, this ensures that children adopt healthy eating habits, slowing the rise in cholesterol level with age, and creating a new generation with lower risk factor levels (Farooqi et al., 2000; Enas, 2000). This is crucial due to the genetic susceptibility of Indian people to CHD (Anand et al., 1998).

2.6.3 Lifestyle practices, health beliefs and behaviours in relation to CHD

An acute CHD is described as the most dramatic and abrupt threat to life and livelihood (King, 2002) with unhealthy lifestyle health behaviours playing a major role in risks of CHD. These behaviours and lifestyle are influenced by health beliefs which in turn are influenced significantly by an individual’s culture. Literature suggests that lifestyle practices, health beliefs and behaviours are interrelated (Hodgetts, Bolam & Stephens, 2005; Lyons & Langille, 2000) and influence the physical and mental health and well being of an individual. The following sections will elaborate on each of these interrelated aspects and discuss their relevance to CHD.

2.6.3.1 Health beliefs

Patients’ beliefs about health and illness influence their health behaviours considerably (Harding & Taylor, 2002) and varies with their health status, illness severity and experiences (Gao, Nau, Rosenbluth, Scott & Woodward, 2000). Beliefs about the seriousness of illness consequences and perceived lifestyle barriers provide explanations about particular health behaviours (Al-Hassan & Omran, 2005; Janz & Becker, 1984). Perceived seriousness refers to perceived harmful consequences of a particular illness in relation to physical and psychological health and perceived barriers. This aspect is elaborated in the section 2.6.3.2.2 that discusses the Health Belief Model, the most commonly used health behaviour model in the context of CHD. In order to enhance cultural competence in health care it is vital to understand the various health beliefs and subsequent health behaviours of people from different cultures (Braddock, 2006).
The biomedical dualism between the body and the mind fails to recognise the importance of treating the two entities (body and mind) simultaneously and focuses mainly on elimination of symptoms and disease. This results in a failure to emphasise psychotherapeutic interventions, which facilitate adjustment to chronic illness such as CHD (Kleinman, 1988). A number of studies conducted worldwide, report on illness beliefs and CHD (Affleck, Tennen, Croog & Levine, 1987; Cooper, Lloyd, Weinman & Jackson, 1999; Greenwood, Muir, Packham & Madeley, 1994; King, 2002; Murray, 1989; Petrie & Weinman, 1996). Stress or worry was perceived to be the most important cause of CHD as reported by Greenwood et al (1994), King (2002) and Murray (1989). A study conducted in New Zealand by Petrie and Weinman (1996), reported that attendance at cardiac rehabilitation was significantly related to a stronger belief on hospital admission that CHD could be cured or controlled. Illness beliefs or perceptions were therefore considered to be important determinants of recovery from acute CHD. This study found a strong association between patient’s perceptions of illness, participation in rehabilitation, return to paid work and long-term disability. The authors (Petrie & Weinman, 1996) concluded that to optimise cardiac rehabilitation it is important to identify illness perceptions in the initial stages of the cardiac illness. As reported by Turner (1992) lifestyle practices, gender, socioeconomic status and culture influence an individual’s beliefs and understanding of the disease process.

2.6.3.2 Health behaviours

Health behaviours are those activities that people take on, in order to maintain good health (Misra & Gupta, 2004). Health behaviours are influenced by people’s health beliefs and many behavioural aspects are reflected in their lifestyle (Hodgetts et al., 2005; Lyons & Langille, 2000). Health related behaviour is a multifaceted phenomenon influenced by knowledge about health experiences of family members, an individuals’ own health and illness experiences (Hunt, Davison, Emslie & Ford, 2000), an individual’s culture and beliefs (Baradaran & Knill-Jones, 2004; Viner et al., 2006) and the environment (Smedley & Syme, 2000).
The literature suggests that immigration to developed countries enhances behavioural and biological risks (e.g. obesity, hypertension) for chronic diseases among these immigrants (Misra & Gupta, 2004; Reed & Yano, 1997). Health related behaviours are considered to have a significant impact on CHD risks (Charlton, Murphy, Kaw, Ebrahim & Davey-Smith, 1997; Hunt et al., 2000). The behavioural risk factors for CHD include consumption of high fat diet and animal products, a sedentary lifestyle, exaggerated stress response and social isolation (Markides, Levin & Ray, 1985; Misra & Gupta, 2004; Reed & Yano, 1997; Toobert, Strycker, Glasgow, Barrera & Bagdade, 2002). Behavioural changes such as reduced dietary fat intake, increased physical activity, smoking cessation, stress management and enhancing social support are believed to promote healthy lifestyle and reduce the risks of CHD. Therefore multiple interventions are regarded as an efficient method of dealing with the composite interactions between lifestyle behaviours, social environment and maintenance effects (Haskell et al., 1994; Toobert et al., 2002).

Patterns of health behaviours have been a significant topic of interest for health professionals over the past few decades and are described under three categories that include: preventive health behaviour, illness behaviour and sick-role behaviour. These categories were described in the mid-sixties and the links between these behaviours have to some extent become indistinct over time. Kasl and Cobb (1966a, 1966b; as cited in Glanz, 2002) define the three aspects of health behaviour as follows: “Preventive health behaviour is any activity undertaken by an individual who believes himself to be healthy, for the purposes of preventing or detecting illness in an asymptomatic state” (Kasl & Cobb, 1966a, p.12). This can include self-protection behaviour which is an action intended to confer protection from potential harm such as wearing a helmet when riding a bicycle or using seat belts in a car. “Illness behaviour is any activity undertaken by an individual who perceives himself to be ill, to define the state of health and to discover a suitable remedy” (Kasl & Cobb, 1966a, p.12). “Sick-role behaviour is any activity undertaken by an individual who considers himself to be ill, for the purpose of getting well” (Kasl & Cobb, 1966b, p.12). It includes receiving
Many psychosocial models of health behaviour are described in the literature. These include the Social Cognitive Theory (Bandura, 1977), Health Belief Model (Becker, 1974; Janz & Becker, 1984; Rosenstock, 1974), The Transtheoretical Model (Prochaska, 1979), Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), Theory of Planned Behaviour (Ajzen, 1991) and Protection Motivation Theory (Rogers, 1975; 1983). Health behaviour is a very composite phenomenon and cannot be explained by a single unified theory. Therefore health professionals have developed models that draw on a number of theories to help understand a specific problem in a particular context or setting (Glanz, Lewis & Rimer, 1997).

Most of these devised models predict health behaviour and are based on psychosocial determinants of health behaviour: self-efficacy, outcome expectations, goals and impediments (personal, situational and health system) to health (Bandura, 2004). For example, physical environmental factors such as access to facilities, proximity and convenience, attractiveness of the exercise facility and neighbourhood safety influence health behaviours (Giles-Corti & Donovan, 2002). Social support is regarded as an important factor for maintaining physical activity (Sallis & Owen, 1999) and people with exercise partners or members of sporting clubs are more likely to continue with regular exercise in comparison to those who do not have social support (Giles-Corti & Donovan, 2002). The convenience of a cardiac rehabilitation program including access and parking facilities and characteristics of the rehabilitation program have an influence on participation in cardiac rehabilitation (Andrew, Oldridge, Parker, Cunnigham & Rechnitzer, 1981; Kjaer, Gyrd-Hansen & Willaing, 2006). The fundamental assumptions of the above-mentioned health behaviour theories and their application to CHD are described in the following paragraphs.
2.6.3.2.1 Social Cognitive Theory

The Social Cognitive Theory (Bandura, 1977) assumes that health behaviour is influenced by personal and environmental factors with the concept of self-efficacy perceived as an important factor in promoting changes in health behaviour. This theory helps understand the complex relationships between the individual and his/her environment, how actions and conditions emphasise or discourage change and the value of believing in and knowing how to change (Bandura, 1977). A basic premise of this theory is that people learn not only from their own experiences, but also from other's experiences. This model provides a foundation for several behaviour change strategies such as use of role models who follow healthy behaviours and achieve good results (Bandura, 1986).

The Social Cognitive Theory explains that health behaviour change can be achieved through the use of a number of constructs: reinforcement-which are positive or negative consequences of a behaviour, behaviour capability-in order to achieve change an individual needs to learn how and what to do to change behaviour, expectancies-are values an individual places on the expected result consequent to the behaviour, self efficacy -refers to an individual’s self-belief in the ability to take action and persevere with the action, and reciprocal determinism-which is the dynamic relationship between the individual and the environment (Washington State Department of Health, 1998). This theory helps health professionals and educators to understand the complex relationships between the individual and his/her environment, how actions contribute to change and importance of knowing how to change (Glanz, 2002).

Haskell et al. (1994) used the concept of self-efficacy and self-regulatory system derived from the Social Cognitive Theory to promote lifestyle changes in individuals suffering from CHD. The risk factors that were targeted included smoking, weight reduction, exercise and nutrition and lipid reducing treatment. At the end of the four years patients receiving normal care from their physicians either showed no change or worsening of their cardiac condition. To the contrary those patients who took part in self-management
achieved significant reductions in risk factors for CHD. These patients reduced their intake of dietary fat, lost weight, reduced their LDL levels, increased their HDL levels, increased their cardiovascular capacity and had lower hospitalisation rates for coronary heart problems and cardiac deaths (Bandura, 1998, Haskell et al., 1994).

2.6.3.2.2 Health Belief Model
The Health Belief Model is one of the most frequently applied models in the context of cardiovascular disease (e.g. Al-Ali & Haddad, 2004; Ali, 2002; Mirotznik, Feldman & Stein, 1995). This model attempts to explain health behaviour in terms of individual decision making. The model proposes that the probability of a person adapting to a given health related behaviour is a function of that individual's perception of threat to their personal health and the belief that a recommended behaviour will diminish this threat. Accordingly, a person would adopt a particular behaviour if non-adoption of that behaviour is perceived as a health threat.

The Health Belief model contextualises behaviour change as linear and unidirectional (Rosenstack, 1974). This model focuses on five factors: perceived severity, perceived threat, perceived benefit, perceived barriers, and self efficacy. It provides insights into why people make health decisions and creates a process for encouraging change. It is also useful to design health education programs (Becker, 1974; Janz & Becker, 1984; Rosenstock, 1974). The Health Belief Model was initially developed to explain the reasons why individuals did not take advantage of preventive services such as disease screening, immunisation and healthy lifestyle approaches for cardiovascular disease prevention. According to the health belief model, the factors that play a role in behaviour change in individuals with cardiac illness are motivation, degree of social support, knowledge of risk factors for heart disease, family history of cardiac illness and need for medical treatment for cardiovascular problems (Andersson, 2006).

The main features of the Health Belief Model in relation to cardiovascular disease is best explained by the following example: During a routine doctor’s
visit a woman reveals that she is at risk of cardiac illness due to a family history (perceived threat). She acknowledges that both her parents died prematurely from cardiac problems (perceived severity). Her doctor then explains to the woman the benefits of regular physical exercise, which would help her to reduce the risk of heart disease (perceived benefit). Having a full time job and family responsibilities the woman feels that it would be difficult to make time for exercise (perceived barriers). On her drive home from work the woman sights an advertisement for a program promoting daily walks as part of an individual’s morning and evening routine. The woman thereafter gets up half an hour early each day to walk two miles (self-efficacy). and finds this routine convenient and successful (Washington State Department of Health, 1998). Therefore the health belief model provides insights into the reasons why people make health decisions and generates a process for encouraging and supporting the change process and consequently is useful in formulating health education programs.

2.6.3.2.3 The Transtheoretical Model
The Transtheoretical Model recognises that not every individual is keen to change health behaviours. The transtheoretical model is not linear because it views behaviour change as a process during which individuals are at various stages of willingness to change. Individuals can enter and exit at any point of behaviour change and may also repeat a stage many times. Prochaska (1979) describes five stages of behaviour change that includes precontemplation, contemplation, decision, action and maintenance. Prochaska and Velicer (1997) propose that individuals progress through different stages sequentially but usually revert to previous stages before achieving maintenance. The tenets of this model have been applied in the past 20 years to a range of health behaviours such as smoking cessation, exercise adoption, dietary fat reduction, stress management, medication adherence and sun protection (Prochaska & DiClemente, 1985; Prochaska, Norcross, Fowler, Follick & Abrams, 1992; Prochaska & Velicer, 1997), many of which have relevance to CHD.
In relation to CHD the transtheoretical model is described by the following example: Mr X who smokes a pack of cigarettes a day feels vaguely uncomfortable to smoke in the presence of non-smokers but is content to keep smoking (precontemplation). He smokes outside with his friend who is also a smoker. Mr X’s wife convinces him to make an appointment with his doctor to discuss quitting smoking (contemplation) as she has learnt that smoking is not only a risk factor for lung cancer but also a high risk for cardiac illness. Mr X signs for a self-help program and decides to quit (decision). He starts using the nicotine patch and follows the self-help program for ways to break old habits (action). He then avoids situations that trigger a desire to smoke and regularly rewards himself (maintenance) for not smoking (Washington State Department of Health, 1998). It is argued that there are serious problems with the Transtheoretical model. These include issues with operationalisation of the model and application of the model to change behaviour (Povey, Connor, Sparks, James & Shepard, 1999). Therefore this model has held back advances in field of health promotion despite its intuitive appeal to health practitioners and its unabated popularity (Bunton, Baldwin, Flynn & Whitelaw, 2000; Etter & Sutton, 2002; Littell & Girvin, 2002; Povey et al., 1999; Whitelaw, Baldwin, Bunton & Flynn, 2000).

2.6.3.2.4 Theory of Reasoned Action

In the Theory of Reasoned Action, health behaviour is believed to be a consequence of a person’s intention, which comprises of an individual’s attitudes towards performing a particular behaviour and the influence of perceived social and cultural norms in performance of the behaviour. An individual’s attitudes are influenced by his/her beliefs about the consequences of performing a given action and subjective evaluation of each of the consequences. Individuals are motivated to behave in a particular way when they trust that such behaviours will deliver valuable outcomes and are less motivated when they believe that certain behaviours will not provide expected outcomes (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975).

The Theory of Reasoned Action has been applied to many health related behaviours such as weight loss, smoking, alcohol abuse and dietary patterns.
(Redding, Rossi, Rossi, Velicer & Prochaska, 2000), most of which are relevant in the context of cardiovascular illness. This model predicts behaviour from intention and proposes relationships between beliefs, attitudes, intentions and behaviour (Ajzen & Fishbein, 1980; Montano, Kasprzyk & Taplin, 1997). Intentions are influenced by three fundamental variables: subjective norms, attitudes and self-efficacy. Subjective norms comprises of an individual’s perception of what significant others might believe about his/her ability to perform a particular behaviour. For example when an individual intends to cut down on dietary fat by giving up food such as red meat and bacon, this decision could be partly influenced by what the individual believes his or her spouses’ opinion in this regard would be. Attitudes are conceptualised in terms of values developed by an individual, such as the attitude that eating a healthy diet might prevent heart disease. Self-efficacy is a measure of how confident an individual feels in successfully performing a particular behaviour such as eating a healthy diet and thereby reducing the risks of heart disease.

2.6.3.2.5 Theory of Planned Behaviour

The Theory of Planned Behaviour builds on the theory of reasoned action by adding a third determinant - perceived behavioural control (Ajzen, 1991). This component represents a person’s beliefs about his or her ability to perform the behaviour in question. This model underscores the importance of assessing the extent to which the target audience possess the information needed to carry out a promoted action (Ajzen, 1991).

Conn, Tripp-Reimer and Maas (2003) conducted a study to determine the relationships between exercise intention and behaviour amongst older women and the constructs of the Theory of Planned Behaviour and their findings supported the application of the theory to promote exercise amongst older women. The Theory of Planned Behaviour has also been usefully applied to other lifestyle behaviours, for example in relation to CHD (Johnston, Johnston, Pollard, Kinmonth & Mant, 2004; Sjoberg, Kim & Reicks, 2004).
2.6.3.2.6 Protection Motivation Theory

The Protection Motivation Theory presumes that environmental factors or interpersonal sources of information about health risks are insufficient for adopting healthy behaviours (Rogers, 1975, Rogers, 1983). An individual must believe in himself as being capable of carrying out and adhering to a preventive regimen. Protection motivation is enhanced when an individual experiences a severe health threat, feels vulnerable, is confident that a particular behaviour is effective in averting the threat, trusts his capacity to succeed in completely adopting a health behaviour and when the costs associated with adopting the health behaviour is small (Boer & Saydel, 1996; Rogers, 1983). Such factors produce protection motivation and subsequently in adopting healthy behaviours (Prentice-Dunn & Rogers, 1986). This theory has been applied in a number of studies to determine protective motivation amongst individuals with CHD in relation to lifestyle behavioural factors such as exercise behaviour, smoking and diet (Frunn, Pratt & Owen, 1992; Nic Gabhainn et al., 1999; Plotnikoff & Higginbotham, 2002).

In conclusion, the various intervention models of behaviour change have been applied to change unhealthy lifestyle behaviours in the context of CHD, although the effectiveness of these models has not been determined among Indians. Models that take into account the needs of specific population and cultural groups are considered to be effective in bringing about behavioural change (Kelly, 2005).

2.6.3.3 Lifestyle

The concept of lifestyle is based on the idea that people generally exhibit a recognisable pattern of behaviour in their daily life (Hodgetts et al., 2005; Lyons & Langille, 2000) with lifestyle being influenced by social, cultural and environmental factors. The World Health Organisation (WHO, 1998) describes lifestyle as a way of living based on identifiable patterns of behaviour which are determined by the interplay between an individual’s personal characteristics, social interactions and environmental living conditions. A healthy lifestyle is a way of living that lowers the risk of being seriously ill or dying early. Although not all diseases can be curable the
WHO states that deaths from coronary heart disease and lung cancer can be avoided by following healthy lifestyles (WHO, 2001). Lifestyle interventions have now become the main focus of CHD management (Tonkin, 2004).

Health behaviours can be performed as a one off action or done periodically such as getting immunisation (e.g. a flu shot) or putting on sunscreen. Those health behaviours that are performed over a long period of time such as a healthy diet, regular physical exercise or avoiding tobacco use and other such sustained patterns of behaviour are termed lifestyle behaviours. A combination of various sustained healthy behaviours is referred to as a healthy lifestyle. However, the majority of people do not adhere to healthy or risky lifestyle behaviours with complete consistency. Ideally an individual who practices a variety of health promoting behaviours is described as following a healthy lifestyle (Encyclopaedia of Public Health, 2006). A healthy lifestyle predicts people’s behaviours in three interrelated dimensions: individuals, their social environment (such as family, peers, community and workplace) and the relation between individuals and their social environment (Lyons & Langille, 2000). A sedentary lifestyle, smoking, increased fat consumption and unhealthy dietary habits and poor stress management are all described as lifestyle behavioural factors that need modification to reduce risks for CHD and this aspect has been discussed in section 2.6.2.

2.6.4 Lifestyle practices, health beliefs and behaviours of Indians in relation to CHD

Amongst Indians primary health care and preventive health care approaches are uncommon with individuals visiting secondary and tertiary health care services only in the instance of sickness and suffering. There is a general lack of awareness of the concepts of healthy eating, regular exercise and yearly wellness checkups. Misra and Gupta (2004) surveyed health promotion behaviours of 261 Gujarati Asian Indian immigrants to the United States. They reported that health promotion behaviours are lower amongst younger Indian immigrants in comparison to immigrants from other ethnic groups in the U.S, thereby predisposing them to Type 2 diabetes and heart
disease (Misra & Gupta, 2004). This study, however only focussed on one specific group of migrant Indians and therefore the applicability of the results to all migrant Indians cannot be confirmed. The National Health Survey conducted by the Australian Bureau of Statistics (ABS, 2006) reported on a number of lifestyle characteristics and health behaviours such as physical activity, alcohol consumption, fruit and vegetable consumption, physical activity, psychological distress and time since last consultation with a doctor. Data for Indian born persons were extracted from this survey and the results are presented in this chapter in section 2.6.4.5. In the context of migrant Indians, their health behaviour, health beliefs and lifestyle are described under the following subheadings as illustrated in Table 5:

Table 5: Lifestyle practices, health beliefs and health behaviours of Indians

<table>
<thead>
<tr>
<th>Aspects of lifestyle, health beliefs and behaviour</th>
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<tbody>
<tr>
<td>• Dietary habits of Indians</td>
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<tr>
<td>• Lack of physical exercise among Indians</td>
</tr>
<tr>
<td>• Indians’ health beliefs and behaviour</td>
</tr>
<tr>
<td>• Religious faith followed by Indians</td>
</tr>
<tr>
<td>• Characteristics for Indian born persons from the National Health Survey 2004</td>
</tr>
</tbody>
</table>

2.6.4.1 Dietary habits of Indians

Though the eating habits of Indians are many and varied there are common threads in the preparation of food. Indians consume foods rich in fat, salt and sugar content, and vegetables tend to be over cooked (Ahmed 1999, Enas 2000). The Indian diet which is high in saturated fat includes meat, whole milk, high-fat dairy products and certain vegetable oils like coconut oil, and palm oil (Enas, 2000). With immigration, the dietary habits of Indians often alter. This includes the addition of full cream milk, cream and cheese to the Indian diet and the fat content in Indian sweets and deserts is further
augmented (Ahmed 1999, Enas & Senthilkumar 2001). In addition to excessive fat and sugar consumption, a predominantly carbohydrate rich and relatively low protein diet prevails in Indians.

Jonnalagadda and Diwan (2005) examined correlates of healthy behaviours in middle-aged and older Indian immigrants (Indian men, n=162 and Indian women n=64) in the U.S, using a telephone survey to collect data in relation to behavioural risk factors, chronic disease prevalence, quality of social support, acculturation and self-rated health. The researchers (Jonnalagadda & Diwan, 2005) reported a diet deficient in high fibre foods such as fruits, vegetables and green leafy vegetables amongst Indian migrants in the U.S, with 41% of the study sample being vegetarians. This implies that Indians including vegetarians do not consume sufficient quantities of fruits and vegetables on a day to day basis. The increased susceptibility of Indians to CHD has not only been attributed to damaging effects of unhealthy lifestyle or raised cholesterol levels, but also due to inadequate consumption of fruit and vegetables consequently producing a deficiency of antioxidant vitamins A and C and this is further worsened by the habit of consumption of ghee (clarified butter) rich in cholesterol oxide (Singh et al., 2002).

The high risk of CHD reported in Indians is similar for both vegetarians and non-vegetarians (Enas, Garg, et al., 1996; Mohan, Deepa et al., 2001). A number of Indians are vegetarians for a variety of reasons, including caste restrictions, religion and high cost of meat and meat products. The laws of ‘karma’ could punish the person in future life for eating meat as it does harm to the animal (Nath et al., 1998). For Hindus, the cow is sacred, so they will not eat beef or beef products, although the consumption of dairy products is generally allowed (Assanand, Dias, Richardson & Waxler-Morrison, 1990; Madhok, Bhopal & Ramaiah, 1992).

While India is predominantly a Hindu country, with 82% of its population practicing Hinduism, it is also home to 75 million Muslims (Assanand et al., 1990). Muslims also follow dietary restrictions, such as avoiding pork or pork products and eating only halal meat. Halal meat is meat that has been
ritually slaughtered according to Muslim law. During the holy period of Ramadan, eating and drinking is only permitted before sunrise and devotees must fast the entire day without even water to drink, until the sun sets (Assanand et al., 1990). Indian Muslims will maintain most of these beliefs when they migrate to other countries.

Singh, Rastogi, Rastogi, Niaz and Beegom (1996) studied dietary intake, physical activity and prevalence of CHD among 152 adults in India and concluded that the incidence of CHD, as well as Type 2 diabetes, was highest amongst the group with central obesity, compared to non-obese people. A similar study by Gupta (1996) in India concluded that a sedentary lifestyle and a high fat intake were the greatest contributory factors to CHD in Indians.

2.6.4.2 Lack of physical exercise amongst Indians
Physical inactivity is a crucial determinant of ill health (Giles-Corti & Donovan, 2002) and a major modifiable risk factor for CHD associated with a 30-50% reduction in CHD risks as well as reduction in obesity, Type 2 diabetes and stroke (Batty, 2002; Wannamethee & Shaper, 2003). A number of studies have reported a sedentary lifestyle in Indians with lack of physical activity (British Heart Foundation, 2000; Dhawan & Bray, 1997; Fischbacher, Hunt & Alexander, 2004; Health Education Authority, 2000; Hughes et al., 1989; Knight et al., 1992; McKeigue, Pierpont, Ferrie, & Marmot, 1992; McKiegue & Marmot, 1988; Shaukat, 1995; Singh et al., 1996). This again predisposes Indians to CHD. Leisure time physical inactivity has been reported to be high among Indians, mainly among women (Wong & Wong, 2003).

The belief among immigrant Indian women that engaging in rigorous exercise can put strain on the joints particularly the knees was reported by Choudhry (1998). These women also perceived that activities such as swimming or playing golf or tennis were more for sports professionals. Indian women have reported not being comfortable wearing costumes such as swim wear and in using gender mixed gyms and other exercise and fitness facilities
The main barrier to physical exercise as reported by migrant South Asian women in Scotland was the lack of time, as most of their time was devoted to looking after their children (Williams, Bush, Anderson, Lean & Bradby, 1996) and in some cases older relatives (Johnson, 2000).

Bush, Williams, Lean and Anderson (2001) reported that Indians associate large body size with health. Therefore lifestyle measures such as daily physical exercise, to control body weight are not followed by Indians. In a recent study by Jonnalagadda and Diwan (2005) more than 30% of Indian migrants in the United States had little or no physical activity. The researchers recommended that future studies should identify barriers to physical exercise amongst Indians, given the cardio protective benefits of regular physical activity. Lack of time, lack of opportunities for physical exercise, and absence of an exercise culture were some of the reasons perceived as barriers to physical activity amongst Indian and Pakistani participants in a study conducted by Lawton et al. (2006). In a study by Mahajan and Bermingham (2004), Indian immigrants residing in Sydney, engaged in less physical activity in comparison to Indians residing in India. Similar results have been reported from UK where Indian migrants were less physically active in comparison to their Indian counterparts (Dhawan & Bray, 1997).

2.6.4.3 Indians’ health beliefs and behaviour

In Indian culture, paranormal forces are regarded as integral to existence and occurrence of health and illness situations (Dalal, 2000; Joshi, 1995; Juthani, 2001). Beliefs such as occurrence of illness due to ill wishes of another person and also due to social beliefs such as the evil eye of another person were identified by Gujarati Indian migrants in a UK study by Jobanputra and Furnham (2005). Of interest in their study is the fact that both older and younger generation Indian immigrants attributed illness to paranormal forces and social beliefs. The study confirmed that these traditional beliefs were retained by Indians subsequent to migration (Jobanputra & Furnham, 2005).
In Indian culture most women observe strict rules of modesty. The majority of Indian women avoid medical examination by male health care providers and in fact many are forbidden to do so (Hutchinson & Baqi-Aziz, 1994). This could have an impact on not seeking medical attention for cardiac problems when a female doctor or health worker is not available. It is reported that some Indian women believe that they are not predisposed to illness and therefore do not seek regular health checks (Chaturvedi, Rai & Ben-Shlomo, 1997). In particular, heart disease is considered to be a health problem that affects men.

Majority of migrant Indians fail to seek regular health check ups, do not visit a doctor unless it is an emergency and are more focussed on wealth creation (CADI Research Institute, 2002), in order to keep their family members comfortable. Most Indians usually prefer home remedies for any ailments or sicknesses and a physician is sought only for serious illnesses (Alagiakrishnan & Chopra 2004). Traditional medicine has maintained its popularity in a number of Asian countries, such as China, India, Japan and Pakistan (e.g. WHO, 2002). A large proportion of the population in a number of developing countries still rely on traditional practitioners, including traditional birth attendants, herbalists and bone-setters and on local medicinal plants to satisfy their primary health care needs. These approaches to health belong to the traditions of each country, and have been handed down from generation to generation. China and India, for example, have developed very sophisticated systems such as acupuncture and ayurvedic medicine (e.g. WHO, 2002).

Ayurveda, is an ancient traditional medicine of the Indian subcontinent a Sanskrit term for the knowledge or science of life where Ayur= life and Veda= knowledge or science (American Public Health Association, 2002). A crucial amount of time might be lost by Indian patients before they seek emergency medical consultation for an acute event of CHD. This may be due to reliance on traditional systems of medicine such as Ayurveda. Nevertheless, such beliefs could change or modify as Indo-origin people migrate to Western
societies. The extent of the use of traditional medicine by Indian migrants in the Australian context is unknown.

2.6.4.4 Religious faith followed by Indians

In India the majority of the population follow the Hindu faith (82%) with Muslims the largest religious minority (12.1%) and Christians only around two percent (Census of India, 2001). The pattern in Australia is significantly different. The 2001 census recorded that 33.4 % of Indian-born persons were Hindus, 30.9% were Christians, and 10.2% were Sikhs (Federation of Ethnic Communities Councils of Australia, 2002) and the rest were Buddhists, Muslims and Jains.

Given the fact that 30.9% of the Indians in Australia are Christians (Federation of Ethnic Communities Councils of Australia, 2002), religious beliefs may not be a significant issue in relation to CHD. However, as the number of Indians is not obvious from census data (which takes into account only Indian born and first generation Indians) it is possible that a large percentage of Indians who have come from places such as Fiji, Malaysia, Sri Lanka, UK and Africa would follow Hinduism. Also those Indians who follow Christianity would still pursue Indian cultural and dietary practices and as well have genetic predisposition to CHD.

2.6.4.5 The National Health Survey 2004/2005: Characteristics of Indians in relation to CHD

In 2004/2005 the ABS conducted the fourth in the series of National Health Surveys, designed to acquire national benchmark information on a variety of health related issues and to enable trends in health to be monitored over time (ABS, 2006). Data for Indian born persons were extracted from this survey and are summarised in the following paragraph. Table 6 illustrates the characteristics for Indian-born persons from National Health Survey 2004/2005:
Table 6: Characteristics for Indian-born persons from National Health Survey 2004/2005

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Subgroups</th>
<th>Indian Born N = 153</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N (%)</td>
</tr>
<tr>
<td>Age</td>
<td>&lt;24 yrs</td>
<td>37 (24)</td>
</tr>
<tr>
<td></td>
<td>25-54 yrs</td>
<td>85 (55)</td>
</tr>
<tr>
<td></td>
<td>55-74 yrs</td>
<td>24 (16)</td>
</tr>
<tr>
<td></td>
<td>&gt;75 yrs</td>
<td>7 (5)</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>80 (52)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>73 (48)</td>
</tr>
<tr>
<td>Long term conditions</td>
<td>Type 2 diabetes</td>
<td>13 (9)</td>
</tr>
<tr>
<td></td>
<td>High Cholesterol</td>
<td>13 (9)</td>
</tr>
<tr>
<td></td>
<td>Ischaemic Heart disease</td>
<td>4 (3)</td>
</tr>
<tr>
<td></td>
<td>Hypertensive Disease</td>
<td>20 (14)</td>
</tr>
<tr>
<td>Psychological Distress</td>
<td>Low</td>
<td>103 (72)</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>28 (19)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>7 (5)</td>
</tr>
<tr>
<td>Self Assessed Health</td>
<td>Excellent</td>
<td>39 (27)</td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>99 (69)</td>
</tr>
<tr>
<td></td>
<td>Poor</td>
<td>5 (4)</td>
</tr>
<tr>
<td>Time since last consulted a doctor</td>
<td>&gt;12 months</td>
<td>29 (20)</td>
</tr>
<tr>
<td></td>
<td>&lt;2 weeks</td>
<td>32 (22)</td>
</tr>
<tr>
<td>Alcohol Consumption</td>
<td>In the last week</td>
<td>49 (34)</td>
</tr>
<tr>
<td>(Last consumed)</td>
<td>12 months or more</td>
<td>5 (4)</td>
</tr>
<tr>
<td></td>
<td>Never consumed</td>
<td>59 (41)</td>
</tr>
<tr>
<td>Tobacco Smoking</td>
<td>Current smoker</td>
<td>19 (13)</td>
</tr>
<tr>
<td></td>
<td>Ex smoker</td>
<td>26 (18)</td>
</tr>
<tr>
<td></td>
<td>Never Smoked</td>
<td>94 (65)</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>Sedentary</td>
<td>59 (41)</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>54 (38)</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>26 (18)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>5 (4)</td>
</tr>
<tr>
<td>Body Mass Index</td>
<td>Obese (BMI&gt;30)</td>
<td>11 (8)</td>
</tr>
<tr>
<td>Fruit Consumption</td>
<td>Don’t eat fruit</td>
<td>5 (4)</td>
</tr>
<tr>
<td></td>
<td>One or less serves</td>
<td>64 (44)</td>
</tr>
<tr>
<td></td>
<td>3 or more serves</td>
<td>33 (23)</td>
</tr>
<tr>
<td>Consumption of Vegetables</td>
<td>1 or less/don’t eat</td>
<td>43 (30)</td>
</tr>
<tr>
<td></td>
<td>3 or more</td>
<td>28 (19)</td>
</tr>
</tbody>
</table>

Note: Decimals have been rounded to the closest whole numbers
A total of 153 Indian born persons participated in the 2004/2005 National Health Survey of which 80 (52%) were male and 73 (48%) were female. Information presented on health related issues will be restricted to 144 Indian born persons who were over 15 years of age as shown in Table 6 illustrated in the following page. Of the 144 Indian born persons, 113 (79%) reported a sedentary lifestyle and low physical activity. Thirteen (9%) had Type 2 diabetes and another 9% reported high cholesterol. Hypertensive heart disease was present in 20 (14%) Indians surveyed. Twenty-nine (20%) had not visited a doctor for over 12 months, 59 (41%) had never smoked and 94 (64%) had never consumed alcohol. Less than one serve of fruit per day was consumed by 64 (44%) persons with another 4% who never ate fruit and 30 (43%) consumed less than one serve of vegetables each day.

Data from the 2004/2005 National Health Survey presented in Table 6 is not a true representation of Indian population residing in Australia. It only provides health related information for Indians born in India. A genuine representation of Indians residing in Australia would include Indians born not only in India but those born in any country, including Australia, United Kingdom, Canada, United States of America, Fiji, Malaysia, South Africa or any other nation in the world and who are residing in Australia. Nevertheless, it still provides an overview of cardiac health related characteristics for Indian born persons in Australia. Furthermore, when this information is considered in relation to known research findings from the literature, in which poor cardiac outcomes have been noted in Indians irrespective of their country of birth, it may be that these lifestyle factors are generally present in the Indian population internationally.

2.6.5 Knowledge of CHD risks among Indians

Prevention of CHD is the most effective way of combating the CHD epidemic. Knowledge of risk factors particularly modifiable risk factors is identified as a prerequisite for change in behaviour and is targeted by prevention programs (Khan et al., 2006). A study conducted by Mosca et al. (2000) explored the awareness, perception and knowledge of heart disease risk and prevention among women from various ethnic backgrounds residing in the United
States. A telephone survey was conducted in 1997 (Mosca et al., 2000) of one thousand US households and the sample included 65.8% Caucasians, 13% African Americans and 12.6% Hispanics. The study showed no ethnic differences between respondent’s rating of their knowledge of heart disease and stroke and the majority of the women reported that they were not well informed about heart disease or stroke and did not know major risk factors for heart disease. Less than 5% of women identified a high fat diet, ethnicity, menopause, ageing, and poor nutrition as risk factors for heart disease. However the study did not include other people from other ethnic groups such as Chinese, Indians or Lebanese and knowledge comparisons was only conducted between the three groups interviewed for the study.

There is paucity of literature that has explored knowledge of risk factors for heart disease amongst Indians. However, studies on South Asians (Indians, Pakistanis and Bangladeshis) report an inadequate knowledge of CHD risk factors (Baradaran & Knill-Jones, 2004; Lip, Cader, Lee, Munir & Beevers, 1996). Farooqi et al (2000) explored attitudes to lifestyle risk factors for heart disease in migrant South Asians aged over 40 years residing in Leicester, UK using focus groups as the data collection process. Participants for the study were selected using lists form general practitioners and from South Asian community centres. The results of the study (Farooqi et al., 2000) revealed that participants were aware of their unhealthy eating habits and identified barriers to improving lifestyle in relation to diet and exercise. These barriers included lack of information on how to cook traditional Indian food in a more healthy way, and lack of women-only exercise facilities. The study recommended individually tailored health promotion programs for South Asians and the recognition of potential cultural obstacles to change in lifestyle. However, a study conducted by Ivey et al (2004) on Indian migrants in California, USA, reported that the participants were knowledgeable about risk factors for CHD, with family history, diet and lack of exercise being considered as the most common causes for developing CHD.
2.6.6 The CHD experience in Indians

A heart attack can considerably afflict patients and their relatives, particularly spouses and impair their health related quality of life (Brink, Karlson & Hallberg, 2002; Karner, Dahlgren, & Bergdahl, 2004; Svedlund & Danielson, 2004; Thompson, Ersser & Webster, 1995). Available literature suggests that coping with cardiac illness is a complex, multidimensional process influenced by cultural beliefs and religious practices (Daly et al. 1998; Gregory, Bostock & Backett-Milburn, 2005) and includes accepting the diagnosis, lifestyle changes, restructuring priorities and focussing on perceived strengths (Jackson et al., 2000; LaCharity, 1999). This section will be discussed under the following sub-headings as shown in Table 7.

Table 7: Experiences of CHD

<table>
<thead>
<tr>
<th>CHD experiences</th>
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<tbody>
<tr>
<td>• Experiences of CHD: A global perspective</td>
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<tr>
<td>• CHD Experiences: The Indian context</td>
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</table>

2.6.6.1 Experiences of CHD: A global perspective

A heart attack can be a shocking experience physically (Young & Kahana, 1993), psychologically (Daly et al., 2000; Lisspers, Nygren & Soderman, 1998; Marcuccio, Loving, Bennett & Hayes, 2003), and psychosocially (Dixon, Lim, Powell, & Fisher, 2000). Studies that have focussed on experiences of cardiac illness either immediately after a diagnosis of CHD or coping and readjustment following a cardiac event describe a period of vulnerability for both patients and family members who express feelings of fear, anxiety, insecurity and inferiority (Benson, Arthur & Rideout, 1997; Davies, 2000; Keckeisen & Nyamathi, 1990; Lidell, Fridlund & Segesten, 1998; McSweeney, Lefler & Crowder, 2005; Moser & Dracup, 1995; Thompson et al., 1995; Turton, 1998) and psychosocial problems in early recovery (Crowe et al., 1996; Dixon et al., 2000; Holliday et al., 2000). There is scarcity of research investigating the overall aspects of the cardiac illness.
experience (Thompson et al., 1995) and the few that have examined post experiences have mainly used questionnaires (Stewart, Davidson, Meade, Hirth & Makrides, 2000). There is also little research that has focussed on CHD experiences of patients from ethnic minority backgrounds (Emslie, 2005).

The experiences of patients and their partners, one month after a heart attack was explored in a study by Thompson et al. (1995). Semi-structured qualitative interviews were conducted with 20 patients and their partners. Results from the study revealed that the first month after the heart attack was associated with a problematic phase and couples used active denial as a process of coping with the cardiac illness. The study results (Thompson et al., 1995) provide implications for nursing practice, particularly on ways to improve support services for patients and their partners in the early convalescence period after an acute cardiac event. In another study that investigated women’s experiences of recovery from a first time myocardial infarction (Jackson et al., 2000), findings reveal that recovery was a complex process, which was initially characterised by fear and ambiguity and in course of time these feelings were replaced with a more positive outlook and a sense of regaining confidence about the future. A significant finding from this study was the unmet information needs identified by participants and this has also been reported in other studies (e.g. Thompson et al., 1995; Webster, Thompson & Davidson, 2002). After a myocardial infarction, patients can experience interpersonal, family and financial problems, impediments to treatment and self care and difficulty in returning to work (Gregory et al., 2005; Marcuccio et al., 2003; Stewart et al. 2000.

Studies that have focused on experiences of patients and spouses/family members of patients with cardiac illness have concentrated on people from diverse cultural groups such as Finnish (Hentinen 1983), Taiwanese (Yeh, Gift & Soeken, 1994), North American (Beach et al. 1992; Coyne & Smith 1991; Hilbert 1993) Lebanese (Daly et al. 1998), British (Mc Gee et al. 1994; Thompson & Cordle 1988) and Chinese (Daly et al., 2002) communities. Regardless of the patients’/family members’ cultural background all these
studies stress the incidence of emotional distress, fear, anxiety and feeling of insecurity in patients and spouses/family members of patients with cardiac illness.

Family members play a vital role in providing support and help in promoting readjustment among patients after a heart attack (Ben-Sira & Eliezer, 1990; Daly et al., 2000; Karner et al., 2004; Svedlund & Danielson, 2004; Webster, 1997). It is argued that spouses’ responses to cardiac illness have profound effects on the emotional adaptation of patients to the illness itself, and to recovery, and rehabilitation (Beach et al. 1992, Karner et al., 2004; Marsden & Dracup, 1991; McKay, 1991; Svedlund & Danielson, 2004).

Family members’ emotional reaction to the cardiac event is significant (Coyne & Smith 1991; Thompson & Cordle 1988, Schott & Badura 1988; Svedlund & Danielson, 2004), with family members demonstrating a need for information, advice, and support. The literature suggests that there is a scarcity of support services for family members (Svedlund & Danielson, 2004; Thompson 1994). Considerable distress amongst family members after a coronary event is reported in a study of Lebanese born women in Sydney, Australia (Daly et al., 1998). In this study by Daly et al. (1998) that explored the experiences of female spouses of survivors of acute myocardial infarction, participants expressed a range of negative feelings, emotional fragility, fear of recurrence of coronary event and/or loss of male spouse, seeking out for support and hope for the future including anticipation of their partner’s return to paid work. Ivey et al., (2004) recommend that more qualitative studies on CHD in migrant Indians are necessary to develop instruments sensitive to the Indian culture and to inform quantitative research focussing on CHD in Indians.

2.6.6.2 CHD Experiences: The Indian context

Very little international literature has specifically focussed on CHD experiences of Indian migrants. The majority of studies on CHD in migrant Indians are epidemiological and focus on incidence, patterns of high risk of CHD in Indians and morbidity and mortality due to CHD. A few qualitative
studies focus on one aspect of CHD amongst migrant Indians such as awareness and attitude to risk factors (Farooqi et al., 2000), barriers to physical exercise (Johnson, 2000). Webster et al. (2002) explored the perceptions of 19 Gujarati Indian (Indians from the State of Gujarat in India: one of 28 Indian States and seven union territories) survivors of MI residing in Leicester, UK. Data were analysed using grounded theory approach. A need for more culturally specific information and advice, a strong belief in fate, and frustration with services of their family doctor were reported by the study participants (Webster et al., 2002). However findings of the study conducted by Webster et al. (2002) cannot be generalised to Indians, as the focus of the study was on one group of Indian families namely Gujarati Indians.

Migrant Indians in Leicester, UK, identified Indian diet as a major contributory factor for CHD. However they felt that the stress of living in a western society, racial disadvantage and consequent changes to the family structure was the main reason for CHD among Indians (Farooqi et al., 2000). Chaturvedi et al. (1997) have stressed the importance of education for South Asian families receiving treatment for heart disease thus helping these families to attend emergency departments in a timely fashion and to avoid delays in seeking treatment for any suspected cardiac problems.

2.6.7 Impact of migration and acculturation

Acculturation has an influence on health behaviours through implementation of dietary patterns and lifestyle practices more typical to the host country (Jonnalagadda & Diwan, 2005). Indians generally have a tendency to assert their ethnicity by “Re-inventing Indian culture on foreign soil” (Bhattacharjee, 1992 as cited in Dasgupta, 1998, p. 954.). Therefore immigrant Indians may be more 'Indian' than those residing in India and retain a strong sense of Indian-ness (Farver, Bhadha & Narang, 2002). They also tend to be more religious in the host society and familiarise their next generation with their traditional practices and customs (Dasgupta, 1998; Sheth, 1995). Indians feel a sense of pride and moral obligation to maintain Indian culture and traditions. However, many of them also function biculturally where they
maintain characteristics of Indian culture, while selectively acquiring some from the host (country to which Indians migrate) culture (Farver et al., 2002). In order to adapt to the migrant country Indians introduce changes to their dietary habits and implement a diet which is rich in fat, protein and cholesterol (Hazuda, Haffner, Stern & Eifler, 1988; Kittler & Sucher, 1989).

Globally, immigrant Indians differ from other migrant Asian groups in a number of ways. Migrant Indians constitute one of the most diverse population groups in a number of aspects such as language, region, subcultures, socioeconomic status and religion (Hacker, 1995; Kar, Campbell, Jimenez & Gupta, 1995; Misra & Gupta, 2004). Due to this intense diversity Indians are not encouraged to form ethnic clusters in defined geographical areas. This multiplicity therefore prevents Indians from building an ethnic solidarity similar to the Chinese, Japanese or Filipino groups. This results in a lack of social, geographical and political visibility for Indians in their host countries. Consequently Indians become invisible as a separate ethnic group (Misra & Gupta, 2004).

Stress as a risk factor for CHD has been reported by a number of researchers (Rozanski, Blumenthal & Kaplan, 1999; Saner, Hoffman & Oelz, 1997). The issue of stress amongst the migrant Indian community is poorly researched. A study by Farooqi et al. (2000) about attitudes to lifestyle risk factors for coronary heart disease among people from Indian subcontinent, suggests that many ethnic groups from Indian subcontinent in UK feel that they are under a great deal of stress and perceive that stress is an important cause of heart disease. Although the relationship between stress and heart disease is not clear, high levels of stress are a common presenting symptom of CHD reported amongst South Asian patients in General Practice in the UK (Balarajan, Yuen & Raleigh, 1989). However there is no recent research to support the above statement.

Although Indians maintain traditional practices within the family, they adapt to the workplace norms of the country to which they migrate (Sodowsky, Kwan & Pannu, 1995). However, switching between norms at workplace and family
is regarded as a source of psychological stress for Indians (Rastogi & Wadhwa, 2006). Fear of not being accepted by the Western society or fear of disconnection from Indian culture results in negative feelings amongst Indians thus aggravating feelings of isolation, fear and confusion (Rastogi & Wadhwa, 2006).

### 2.6.8 The relevance of this current study in the Australian context

According to Australian Department of Immigration and Multicultural Affairs the number of migrants from India for the 12 months ending June 2006 increased to 11,286, a rise of 20 per cent over the previous financial year. India overtook China to become the third largest source of immigrants to Australia after Britain and New Zealand (Straits Times, 2006). The relevance of this current study will be discussed under the following headings illustrated in Table 8:

#### Table 8: Relevance of this current study in the Australian context

<table>
<thead>
<tr>
<th>Relevance of study</th>
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<tbody>
<tr>
<td>• CHD in Australia: Extent of the problem</td>
</tr>
<tr>
<td>• Indian community in Australia: Immigration patterns</td>
</tr>
</tbody>
</table>

#### 2.6.8.1 CHD in Australia: Extent of the problem

As reported by AIHW (2002), CHD remains the leading cause of death in Australia in spite of its steady decline since 1968 and has been a significant problem in terms of health and economic burden (AIHW, 2000, National Heart Foundation, 2004). CHD has been recognised as a priority area needing research in terms of best practice by National Health and Medical Research Council (NHMRC) of Australia (NHMRC, 1996).

The National Heart Foundation of Australia (2001) acknowledged that CHD was responsible for 22% of all deaths in Australia and has developed guidelines for management of patients with chronic heart failure (National
Heart Foundation, 2002). The standardised death rate due to CHD between 1994-1998 in Indians living in NSW (Born in India) was 190/100,000 in comparison to NSW overall which was 173/100,000 (Western Sydney Area Health Service, 2000).

2.6.8.2 Indian community in Australian: Immigration patterns
Australia has a culturally diverse population of 18.97 million of which 4.1 million were born overseas (ABS, 2005). A report produced by the Australian Department of Immigration and Multicultural Affairs (DIMA, 2000), states that the number of Indians living in Australia is not immediately obvious from Australian Census data, as many Indians have come from places such as Fiji, Malaysia, Sri Lanka, UK and Africa rather than India.

The census data in 2001 recorded 95,460 Indian born persons in Australia, an increase of 23% from the 1996 census. New South Wales had the largest number (37,930) followed by Victoria (30,690), Western Australia (13,120) and Queensland (7,190). The median age of Indian born persons was 40.4 yrs, with 52.8% males and 47.2% females. The main language spoken at home by majority (47.7%) was English. Of the remainder who spoke a different language other than English, 93.4% were very fluent in English (Federation of Ethnic Communities Councils of Australia, 2002). According to a report released in 2001 by the MEA India, there are 190,000 Indians (Indian born and of Indian origin) living in Australia. Persons of Indian origin include those who arrived in Australia on secondary migration from other countries such as Fiji, UK, Uganda, Kenya, South Africa and Malaysia (MEA, 2001). Since 1986, Indian ancestry has been one among the fastest growing ancestries in Australia along with Chinese and Vietnamese ancestries (ABS, 2003). Indian ancestry was associated with Fiji as a birth place (18%), in addition to India (43%) and Australia (23%) as reported by ABS (2003).

As reported by DIMA (2000) Indian migration to Australia has occurred in four broad waves. In the first wave, small numbers were brought to Australia between 1800 and 1860 to work as hired labourers and domestic workers. The second wave took place from 1860 to 1901 where mainly Sikhs and
Muslims from Punjab, took up rural or agricultural jobs. The present day Sikh settlement at Woolgoolga, in NSW, was founded during this period. The third wave of migration occurred after 1950, after India gained independence from Britain and the region was partitioned into Pakistan and India. The fourth wave has seen the continued arrival of skilled Indians and their families including, doctors, teachers and engineers from many regions (DIMA, 2000). Thus Indians are a well-established community group in Australia (Mohan, Wilkes & Jackson, 2003).

A large number of Indian students are arriving as international students in a number of Australian universities. In the year 2005 about 345,000 international students arrived in Australia, with largest number coming from China and then followed by India. But the enrolment rate of Indian students in Australian universities is rising dramatically and has now surpassed China. In year 2005 the enrolment rate of Indian students increased by 34% from 2004, whereas from China the student enrolment rate increased by 18% (Jain, 2006). In conclusion, this study is relevant in the Australian context as CHD is a significant problem in terms of health and economic burden in Australia, more Indians including young students are migrating to Australia and Indians are at high risk of developing CHD.

2.7 Summary of Literature
This review has shown that Indians are at an extremely high risk of developing CHD in comparison to any other population group in the world. Irrespective of the religion followed by Indians, through its principles of karma and dharma, Indian culture has a major influence on health and illness perceptions, health behaviour and attitude in relation to CHD. Tolerance to pain, beliefs that health and illness are due to karma, failure to seek regular health checks and prioritising the family over health needs are aspects that could influence responses to cardiac illness prevention and management by Indians. In a multicultural society such as Australia, it is therefore important to ensure culturally competent care for all cultural groups including Indians, in order to prevent and manage CHD.
CHD in Indians is markedly premature and severe with high morbidity and mortality. Risk of CHD in migrant Indians (men and women) is augmented in comparison to their Indian counterparts and other ethnic groups in the host countries to which they migrate. Risk of CHD in Indians is attributed to a genetic susceptibility associated with high levels of Lipoprotein (a), atherogenic LDL levels and insulin-resistance syndrome. The predilection to CHD and Type 2 diabetes amongst Indians has been linked to the presence of thrifty genes in Indians. In addition, clustering of CHD risk factors is reported to be high in Indians with risk factors exerting a multiplicative risk of CHD.

Health beliefs, health behaviours and lifestyle practices are considered to be interrelated, with each factor influencing the other and having a significant impact on CHD risks. A number of psychosocial models of health behaviour are described in the literature with the Social Cognitive Theory, Health Belief Model and Theory of Reasoned Action, being frequently applied to lifestyle behaviours and behaviour modifications in CHD. An unhealthy lifestyle including detrimental dietary practices and lack of physical activity in Indians has been reported in a number of studies. Lifestyle interventions to reduce risk of CHD in Indians are considered to have a major role in both primary and secondary prevention.

There is scarcity of literature that has reported on knowledge of risk factors for heart disease amongst Indians. Few studies that discuss this aspect, report inadequate knowledge of CHD and its risk factors among Indians. Although very little research has explored the experiences of CHD in Indians, their experiences are comparable to the CHD experiences of various other cultural groups. These studies discuss about a period of vulnerability for both patients with CHD and their family members, with feelings of fear, anxiety, insecurity and inferiority. Influence of migration on cardiac health and illness amongst Indians and their knowledge of risk factors for CHD need further exploration. Despite the evidence of a significantly high risk of cardiac illness in Indians, the multicultural nature of Australian society and the fact that
Indians are a well-established community group in Australia, no qualitative research has reported on CHD in Indian migrants in Australia.

2.8 Conclusion
The combination of genetic, cultural and social factors has a significant impact on the incidence of CHD in the Indian community. The possibility that risk perceptions for CHD by Indians are socially and culturally constructed poses challenges to health care professionals trying to promote healthy lifestyle changes amongst these patients. Indians may not be aware of their genetic predisposition to CHD. The belief in ‘karma’ could act as a barrier to the seeking of medical attention or could delay necessary medical interventions. Studies to confirm knowledge of risk factors for CHD in Indian community in Australia are essential.

The non individualised nature of cardiac rehabilitation programmes ignores the influences that individual values, attitudes, social influences and cultural identity may have upon lifestyle patterns both in the short and long term (Jeng & Braun, 1997; Renn, Burns, Kasperson, Kasperon, & Slovic, 1992). Low physical activity levels in Indians could prevent them from participating in rehabilitation programs. Indians with CHD could seek the support they need from their extended or joint family system rather than cardiac rehabilitation programs and this needs to be considered by health professionals when treating Indians for CHD.

There appears a need to build awareness of the magnitude of this problem of CHD in Indians not only in health care providers but also in the Indian community. It is important to determine health beliefs, behaviours, risk factor knowledge and experiences of CHD among migrant Indians and explore the impact of migration on these behaviours and CHD experiences. In the next chapter the methodological approach used to conduct this current study will be elaborated. The research paradigm used to direct this study and the fundamental assumptions of the paradigm will be discussed. Methods of data collection and analysis and application of the chosen research paradigm in the context of this study will also be described.
ABSTRACT: CHAPTER 3

Chapter three describes the methodological approach used for this study. In order to investigate migrant Asian Indians’ experiences, risk factor knowledge and health beliefs and behaviours in relation to coronary heart disease, the constructivist paradigm was considered to be the most appropriate approach. The constructivist paradigm leans strongly on qualitative approaches as they allow for thick data collection. Data collection and analysis is guided by the hermeneutic dialectic process. Purposive sampling and snowball sampling approach was used to recruit study participants. Semi-structured in-depth interviews were conducted with eight patients, five family members and 16 ‘healthy’ participants. In addition patients and family members were sent out a survey to enable elaboration of their coronary heart disease experiences. Informed consent was obtained from all participants before the data collection process and anonymity and privacy of participants were maintained at all stages of the study. Transcribed interviews were analysed by unitizing, categorising and looking for patterns in the data. The credibility of the inquiry was maintained using the process of prolonged engagement, maintaining a reflexive journal and peer debriefing. Parts of the methodological approach to this study have been published in two refereed journal articles that focused on experiences of family members and lifestyle aspects of Asian Indians with coronary heart disease, as indicated in Appendix 1.
CHAPTER 3: RESEARCH APPROACH AND METHODS

3.1 Introduction

Chapter two presented an analysis of existing literature in relation to CHD amongst Indians and the possible influence of Indian culture on health beliefs and behaviour in the context of CHD. In order to explore the CHD experiences, risk factor knowledge and related health beliefs and behaviours of migrant Indians in a naturalistic setting, the constructivist paradigm described by Lincoln and Guba (1985) was considered to be the most appropriate qualitative approach to direct this inquiry. This chapter will describe the process of naturalistic inquiry and application of the constructivist paradigm within the context of this study. The fundamental assumptions of the constructivist paradigm and methods of data collection and analysis will be discussed. Key ethical issues in relation to conducting this study will be identified and addressed. Finally the strategies used to maintain trustworthiness and the quality of this inquiry will be discussed.

As discussed in chapter one, it is important to reaffirm that this study has been conducted with a community group of which the researcher has also been a member. In addition, I have experienced a cardiac event from the perspective of a family member. This has presented complex and inherent challenges to the researcher as an insider, in designing the study. The strategies used to address these challenges are discussed at relevant sections throughout this chapter. Kanuha (2000, p. 439) defines insider research when: “The researcher conducts studies with populations, communities and identity groups of which they are also members”. Hewitt-Taylor (2002) warns against biases of insider research that could put the trustworthiness and quality of the study at risk. Researchers’ past experiences, beliefs and emotions could prevent them from achieving essential
detachment for analysing the data impartially (Asselin, 2003). Nonetheless, I entered the research field with an open mind and perspective, and as acknowledged by Webb (1992), the researcher’s values enhance understanding and interpretation of research data. In addition, constructivists accept that they influence the research process and for this reason reflect on their own roles in the research report (Marshall & Rossman, 1999).

3.2 The research paradigm
The term paradigm denotes a fundamental set of beliefs, which guides action in research or inquiry (Crotty, 1998; Guba & Lincoln, 1994; Lincoln & Guba, 2000). Constructivist paradigm or constructivism (Appleton & King, 1997; Guba & Lincoln, 1994; Guba & Lincoln, 1989) was initially referred to as naturalistic inquiry (Lincoln & Guba, 1985). Naturalistic methods of inquiry focus on the issue of human complexity and attempt to confine aspects of phenomena in their totality, within the context of those experiencing them (Gorski, 1998; Patton, 1990; Polit, Beck & Hungler, 2001). The constructivist paradigm offers the researcher a highly robust and realistic framework for undertaking the process of inquiry (Appleton & King, 1997). The assumptions of a research paradigm drive the research and have their origins in the philosophical underpinnings of a particular research approach (Creswell, 1994; Kinchloe & McLaren, 2000; Manning, 1997). The philosophical assumptions of the constructivist paradigm namely the ontological (the form and nature of reality), epistemological (nature of knowledge and relationship between the researcher and what can be known), axiological (role of values in the inquiry) and methodological assumptions are coherent and mutually interdependent, with each influencing and directing the other (Appleton & King, 1997; Lincoln & Guba, 2000; Lincoln & Guba, 1985). These assumptions will be discussed in brief.

3.2.1 Ontological assumptions of the constructivist paradigm
This assumption addresses the nature of reality. Reality is multiple and subjective, and is not a fixed entity (Appleton & King, 1997; Crotty, 1998; Guba
& Lincoln, 1994; Polit & Beck, 2003; Schwandt, 1998). The constructivist paradigm assumes that reality does not exist “out there” and is constructed by human beings in relation to each other. Every individual constructs his reality about the world based on his/her perceptions and this could be similar or different from another individual’s perceptions (Hammersley, 1995; Saule, 2002). Thus reality constructs of individuals participating in the research exist within a context, many constructions are possible and constructions may change with context and time (Guba & Lincoln, 1994; Lincoln & Guba, 1985; Schwandt, 1998). Naturalists thus take the position of relativism: if there are always multiple interpretations of reality that exists in people’s minds, then there is no process by which the ultimate truth or falsity of the constructions can be determined (Lincoln & Guba 1985; Schwandt 1994). Accordingly reality is best informed at a given time in a specific context (Goodman & Elgin, 1988; Lincoln & Guba, 1985).

### 3.2.2 Epistemological assumptions of the constructivist paradigm

Epistemological questions explore the nature of knowledge and the relationship between the researcher and how knowledge can be derived. The basic epistemological assumption of constructivism is transactional subjectivism where assertions about reality and truth depend solely on information and degree of information available to individuals engaged in forming those assertions (Guba & Lincoln, 2001). The epistemological assumption deals with the relationship between the ‘inquirer’ and ‘those being inquired into’ and the nature of knowledge that is derived out of this relationship. These two entities are inseparable, interact with each other and from this interaction compatible constructs, dialectically shaped, can emerge (Erlandson, Harris, Skipper & Allen 1993; Lincoln & Guba, 1985). Thus they become inseparable in this encounter and this will have an impact on knowledge gained.

The naturalistic paradigm assumes that knowledge is maximised when the distance between the inquirer and the participants in the study is minimised.
The voices and interpretations of those under study are key to understanding the phenomenon of interest, and subjective interactions are the primary ways to access them. The findings from a naturalistic inquiry are the product of interaction between the inquirer and the participants (Polit, Beck & Hungler, 2001), where there is an enrichment of knowledge for both researcher and participants. The main purpose of a constructivist research is not to predict or control the world but to identify and understand the multitude of mental constructions of the world, to locate some consensus and reconstruct the world based on these understandings (Crotty, 1998; Guba, 1990; Guba & Lincoln, 1994).

3.2.3 *Axiological assumptions of the constructivist paradigm*

This assumption addresses the role of values in the inquiry process. The naturalistic paradigm asserts that inquiry is value-bound, is influenced by values of the inquirer, by assumptions underlying the methodological paradigm and by values that characterise the context in which inquiry is carried out (Lincoln & Guba, 2000; Lincoln & Guba, 1985).

Values encompass the following: assumptions or basic beliefs; theories or any constructions which may be developed to explain phenomena; perspectives on phenomena of interest; social or cultural norms that regulate feelings; thoughts and actions which are imposed by society or cultural groups; researchers’ ideas; and personal or individual norms imposed by the individual on him- or herself which could reflect or differ from the social or cultural norms (Lincoln & Guba, 2000; Lincoln & Guba, 1985). Lincoln and Guba (2000) suggest that seeking answers to these questions regarding values provides an interpretive framework that guides the entire research process.

3.2.4 *Methodological assumptions of the constructivist paradigm*

This methodological assumption addresses how the inquirer obtains knowledge through the process of inquiry and how research is conducted within the
constructivist paradigm. Lincoln and Guba (1989) portray this method as the hermeneutic-dialectic process. Hermeneutic, since it is interpretive in character and dialectic since it seeks a synthesis based on intuitions, feelings and emotions, through comparison and contrast of divergent views and constructions (Erlandson et al., 1993).

Interpretive understanding is possible when researchers empathetically identify with research participants and when they engage in analysis of language the participants use (Shwandt, 2000). Knowledge is derived interactively between the researcher and research participants through dynamic relationships that are based on truth, honesty, authenticity and absolute positive regard (Lincoln & Guba, 1985). As acknowledged earlier, the researcher’s values are not a source of bias, but are considered to be a source of data, to be reflected on in order to enhance interpretation and understanding (Webb 1992). The researcher and participant interact continually so that joint constructions are created (Schwandt, 1994; Gergen & Gergen, 1991; Lincoln & Guba, 1985) and relationships between these constructs are determined (Erlandson et al., 1993).

### 3.3 The constructivist methodology

In this section the relevance of the constructivist methodology, its application to this study, the utilisation of the hermeneutic-dialectic process in relation to entry requirements and testing of trustworthiness will be discussed.

#### 3.3.1 Conditions of entry

Naturalistic inquiry is always carried out in a natural setting and in a context where the phenomenon is experienced; the human as an instrument builds upon his/her tacit knowledge; uses methods that are primarily qualitative in nature and appropriate to the inquiry. Finally its trustworthiness is tested by four naturalistic analogues namely credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985). Each of these entry conditions and analogues that test
trustworthiness in relation to this study will be discussed in the subsequent paragraphs.

3.3.1.1 Natural setting for the study

The ontological assumptions of naturalistic inquiry suggest that constructions of individual’s reality are best informed at a given time in a specific context (Goodman & Elgin, 1988; Lincoln & Guba, 1985) and cannot be understood in isolation from their contexts (Guba & Lincoln, 1989; Lincoln & Guba, 1985). In this study the participants shared their experiences and concerns in their own homes at a time and date convenient to them. This was the preferred setting for all informants though other options like a restaurant/café, coffee shop, office, shopping centre or park were offered as interview sites to the participants.

3.3.1.2 The researcher as an instrument

The human is considered to be the instrument of choice for constructivist research (Guba & Lincoln, 1989; Lincoln & Guba, 1985). The highly flexible nature; capacity to identify and focus on relevant features, ability to interact with the situation to sense its dimensions and make it explicit; responsiveness; adaptability; knowledge base; ability to explore nonconforming responses and the capacity to clarify and summarise information; uniquely qualify the human as instrument for a study guided by the constructivist paradigm (Guba & Lincoln, 1989; Lincoln & Guba, 1985). In the following paragraphs my inspiration and passion for conducting this study will be discussed in brief.

My father, who had always been my guide, friend, teacher, philosopher, left this world at 66 yrs of age after a massive heart attack in 1996. He had his first attack in 1982 after which he remained in normal health with regular medication till his last day. A man of perfection, who integrated good principles in life, generous and helpful to the needy till his last day died while helping his aunt’s relatives at a crematorium. He had forever maintained a healthy lifestyle, was a strict vegetarian, practised yoga, and did not smoke or consume alcohol.
My research field opened its doors to me immediately after his first cardiac event, after which I became an inquirer in the field. I always kept wondering about the impact of cardiac illness on a previously healthy person and the reasons for his cardiac problem even after maintaining such a healthy life-style. I had a number of discussions with my father on various topics related to his cardiac illness including diet, family history of illnesses, physical exercises, his feelings and emotions after the event and ways he tried to cope with illness. Based on my medical background, I ultimately put the blame on genetic factors. I had waved good-bye to him in 1995 when I left my country. The last time I saw him I had a bizarre feeling and a terrible fear of losing him. I repeatedly questioned myself if I would see him again, and of course I never did. I am still teary while writing this and believe I had to explain the above few lines about my father to whom I have dedicated this endeavour.

**3.3.1.3 Tacit knowledge**

Tacit knowledge comprises a multitude of inexpressible associations that give rise to new ideas, new meaning and new applications of the old (Lincoln & Guba, 1985) and its significance has been acknowledged in the process of naturalistic inquiry (Erlandson et al., 1993; Lincoln & Guba, 1985). Knowledge that can be thought of or perceived is considered as tacit knowledge (Moustakas, 1981). Each person whether novice or expert, has great stores of tacit knowledge with which new understandings can be built (Polanyi, 1967) and the human as instrument has the capacity to draw on his/her tacit knowledge (Guba & Lincoln, 1989).

My personal experience, professional background, research experience and acquaintance with the literature have primarily contributed to my knowledge and understanding of the experiences, health behaviours and beliefs and knowledge of CHD among migrant Indians. Before entering the research field I was conscious of my professional and personal background and made a sincere effort to put aside my own views and opinions and tried to conduct the inquiry
process with an open attitude to the thoughts, experiences and views of participants. Field (1991) argues that an insider may believe, he or she is aware of the rituals, specific behaviours or language of a particular group and these “taken for granted” assumptions may limit the researcher’s ability to explore for deeper meaning or understanding of the phenomenon under study. Although I was part of the culture under study, I was constantly aware that I did not have knowledge of the subculture, language and experiences of a number of groups within the culture. Even though I had experienced CHD from the perspective of a family member, I was aware that my experiences could be similar or different to the experiences of family members who volunteered to take part in this study.

I identified thoughts and beliefs about the study context, acknowledged my assumptions and noted them down. Although it is impossible to completely detach from my assumptions and beliefs, as much as possible I bracketed them from the study. My knowledge in this area could have influenced the joint interpretations that I made with my informants. However, it needs to be accepted that it perhaps gave me a different perspective to that of someone new to the field. Neither of these constructs may possibly be considered superior or inferior but just different and this aspect must be taken into consideration and accepted.

### 3.3.1.4 Qualitative methods of inquiry

A qualitative approach facilitates understanding the interpretations of individuals within the context of their social settings (Creswell, 1994). Qualitative research approaches in health care highlight the human dimension by exploring perceptions, experiences and behaviours of both consumers and providers of care (Tripp-Reimer & Doebbeling, 2004). Numerous qualitative studies that explored patient experiences, needs and satisfaction are reported in the literature (e.g. Maxwell, Streetly & Bevan, 1999; Gjengedal, Rusteon, Wahl & Hanestad, 2003; Peters, Abu-Saad, Vydelingum & Murphy, 2002). Qualitative studies on patient behaviours have provided significant insights into the basis of
behaviours, patterns of service utilisation, logic of non-compliance, barriers to change in health related behaviours and cultural influences on behaviours and lifestyles (Currie, Amos & Hunt, 1991; Kelly & Groff, 2000; Power, 2002; Trostle, 1997).

Naturalistic investigators lean strongly on qualitative approaches, as the human-as-instrument tend to lean towards methods that are an extension of common activities of humans such as looking, listening, reading and talking. Therefore methods such as interviewing, observing and taking account of non-verbal prompts are preferred methods of investigations. Hence qualitative methods are primarily the preferred method of data collection for a study guided by the constructivist paradigm, though there are many opportunities for the investigator to utilise quantitative data (Denzin & Lincoln, 2000; Lincoln & Guba, 1985).

The inductive nature of qualitative inquiry helps constructivists to seek theories that originate from the data and help to provide explanations of the ways humans conceptualise the world in which they live (Guba & Lincoln, 1994). Qualitative methods particularly those which use less structured methods such as unstructured or semi-structured in-depth interviews and participant observation are better suited to elicit patients’ illness perceptions and experiences (Emslie, 2005). Also qualitative methods primarily allow for thick data collection, which demonstrate their interrelationship with their context (Erlandson et al., 1993). Therefore the qualitative method of investigation using interviews was chosen to collect data for this study.

3.3.2 Prolonged engagement and persistent observation

Investment of sufficient time in the natural setting by the investigator is imperative in order to familiarise with the research culture, to detect participant and personal distortions and to build trust and establish rapport with the participants (Lincoln & Guba, 1985). As described in section 3.3.1.2, I entered this field both personally and professionally 22 years ago with varying degrees
of involvement in the field of CHD. For the past few years I constantly had recurring thoughts of having gone through the experiences of being involved with a family member having extensive CHD. The opportunity to be involved in this study awakened my hidden passion for this topic and did not take me long to re-enter the field. My cultural background, being analogous to the study participants, perhaps added more comfort and confidence to enter the field and to engage with the participants. Having experienced CHD from a family members’ perspective made me more inquisitive to explore the perspectives of other people with similar experiences and also added to my comfort and confidence to converse with them in relation to CHD.

3.3.3 The hermeneutic dialectic process

The major purpose of the hermeneutic dialectic process as described by Guba and Lincoln (1989) is not to justify one’s own constructions nor to attack the flaws of the constructions offered by others, but to form a connection between them. As explained by Koch (1994), the prime intention of this process is to tease out the reality constructs that participants hold through a process of purposive sampling, incessant interplay of data collection and analysis, grounding of findings in the data and design refinement. “Dialectic process sees contradictions as fruitful collisions of ideas from which a higher truth may be reached by the way of synthesis” (Bullock, Stallybrass & Trombely, 1977, p. 225 as cited in Appleton & King, 1997). This process facilitates diverse, often conflicting, constructions to be exposed, analysed, critiqued and reanalysed, leading to the development of shared constructions. The application of the hermeneutic-dialectic process in this study will be discussed in the following paragraphs.

3.3.3.1 Selection of participants

The sample for this study comprised of Indians with CHD residing in Australia, their family members and ‘healthy’ participants. Patients, family members and
‘healthy’ participants were invited to take part in this study based on the following criteria that made them eligible to participate:

- Were Indians (males and females) and either a) had a history of an acute cardiac event or b) were family members/carers of patients with a cardiac event or c) were ‘healthy’ with no previous history of heart disease.
- Were above 18 years of age.
- Were willing to participate in the study and be involved in the interview process.
- Had lived in Australia for a minimum of two years.

For those Indians who had the cardiac event it was essential that:

- They had the cardiac event/event after migrating to Australia (Since the purpose of my study was to explore aspects of CHD in migrant Indians)
- At least six months had elapsed since the cardiac event (this decision was taken so that the patients were not disturbed during the initial phase of their recovery from acute event of CHD).

In order to obtain in-depth information and develop greater understanding regarding the phenomena of CHD in the context of this study it was determined that participants would be purposefully selected. As described by Erlandson et al. (1993) and Patton (1990) purposive sampling is central to naturalistic research since the researcher’s major concern is to maximise discovery of heterogenous patterns and problems that occur in the context of the study. This sampling method augments the range of data exposed and maximises the researcher’s ability to recognise emerging themes that take adequate account of contextual conditions and cultural norms (Erlandson et al., 1993).

In order to build the sample Maykut and Morehouse (1994) recommend the technique of snowball sampling to locate subsequent participants. The first few participants who volunteered to be interviewed were requested to provide contact details of people they knew who met the inclusion criteria and be part of the study. These contacts did not have to belong to the same religious or
community sub-group and could either be friends, neighbours or colleagues who met the inclusion criteria for the study. The sample size for this study was not predetermined and as described by Lincoln and Guba (1985), the criterion to determine when to stop sampling was information redundancy and not a statistical confidence level (Erlandson et al., 1993).

3.3.3.1.1 Recruitment of participants
The study was advertised through a media release (Appendix 2) from the University of Western Sydney. Information regarding the study and invitation to participants was advertised in a number of local newspapers in Sydney such as the *Daily Telegraph* and a number of local council newspapers covering a wide range of Metropolitan Sydney suburbs, *The Age* in Melbourne and Indian Community Newspapers such as *India Down Under* and *Indian Post*, which covers all Australian States. The study was also advertised through radio interviews on ABC Canberra and FM 98.5 in Sydney. Interviews were conducted over a 28-month period (April 2003-August 2005).

Participants interested in taking part in the study initially contacted me via telephone call during which the nature of the study was explained to them. These preliminary phone calls gave me an opportunity to informally talk to the participants, engage them in a casual conversation, get acquainted with them, introduce the study and also provided time for the participants to confirm their decision to participate in the study. All those who contacted me consented to take part in the interviews and share their experiences and knowledge during their first phone call, although they were given time to consider if they wished to be involved in the study. Once they confirmed their decision to be involved, a mutually convenient time and place was arranged for the interview. The final sample size consisted of eight patients, five family members and 16 ‘healthy’ participants. Participants were recruited until the interviews were creating no new insights on the research questions.
3.3.3.1.2 Demographic profile of participants
Eight patients, five family members and 16 ‘healthy’ participants consented to take part in the study and were willing to be interviewed. A brief profile of each participant is presented in Appendix 3. The demographic characteristics of the participants will be presented in the next chapter.

3.3.3.2 Data collection
Semistuctured in-depth interviews conducted with participants formed the major data collection process in this study. The interviews focussed on participants’ experiences of CHD and impact of CHD on their daily lives (for patients and family members), related health beliefs and behaviours, knowledge of CHD and impact of migration on health and health behaviours. Appendix 4 illustrates the focus areas and nature of questions that were used to guide the interviews. In a different setting, immediate post interview notes were written meticulously and this enabled the highlighting of a number of observations and concepts that could not be recorded at the actual interview. In addition, patients and family members were sent out a survey (Appendix 5) to enable elaboration of their CHD experiences. The surveys provided an opportunity for participants to add any additional information regarding their CHD experiences and provided the opportunity to enhance interview data and determine if enough in-depth information was provided at the interview in relation to patients and family members’ CHD experiences.

3.3.3.2.1 Interviews with participants
Semi-structured, face-to-face, in-depth interviews were conducted with patients, family members and ‘healthy’ participants. The interviews were audio taped and conducted in the participants’ homes. The interviews were conducted with patients at varying stages of their illness, ranging from two to ten years after their first cardiac event. Where family members volunteered to participate in the study, their interviews followed those of the patients and were conducted on the
same day. Interviews with 'healthy' participants were conducted after an initial analysis of data from patient and family member interviews.

Lincoln and Guba (1985) assert that unstructured interviews are the mode of choice when the researcher does not know what he or she does not know. The interviews in this study involved a degree of structure, but allowed room for the participants to pursue matters of particular concern. Initially the interviews were guided by concepts from the literature and as the interviews progressed the participants themselves raised additional or complementary issues and these formed an integral part of the study findings. Although an initial set of focus areas and questions were used to guide the progress of interviews, the process was flexible and allowed participants to have autonomy to direct the flow of conversation. The open-ended discursive nature of the interviews permitted a recurring process of modification, whereby lines of thought recognised by earlier participants were taken up and presented to later interviewees.

3.3.3.2.1.1 The interview process
An Information sheet (Appendix 6) explaining the purpose of the study was distributed to the participants before the interviews and the purpose of the study was also verbally explained to each participant. Written consent (Appendix 7) was obtained prior to the interviews. Before commencing the interviews, demographic data were obtained from the participants by utilising a brief questionnaire (Appendix 8). As indicated by Taylor and Bogdan (1998), the interview guide helps remind and guide the interviewer to ask certain questions. Similarly, the interview guide I used for data collection, included the list of focus areas, was not used in a structured way and facilitated to keep track of the areas that I wished to explore. The interviews were not merely question and answer sessions but were conducted in a conversational style where participants dominated the scene and their responses steered the creation of further questions. As issues arose, clarifications were sought from participants allowing
for in-depth exploration of their experiences of CHD, knowledge of CHD risk factors and associated health beliefs and behaviours.

New ideas and constructs that arose from each interview shaped the questions for subsequent interviews with other participants. The generation of new constructs and review of observations from early interviews facilitated the validation of emerging themes and this incessant interplay of data collection and analysis helped to attain a better focus for forthcoming interviews. I made a genuine effort to avoid imposing on the participants any of my own beliefs or interpretations and did not interrupt their flow of ideas throughout the interview. It was an enriching experience to share their experiences as thought-provoking and fascinating constructs emerged from the participant’s experiences. The majority of the participants commented that it was a healing experience to be able to share their concerns in a calming environment and just being listened to, gave them a sense of relief. No participants required counselling during or after the interview.

3.3.3.2.1.2 Establishing rapport
In order for the participants to feel confident to converse with me and to discuss and share their experiences, it was essential to develop a mutual trusting relationship. My cultural and professional background perhaps offered some degree of reliability and assurance for the participants to confide in me and this played an integral role in initiating and establishing rapport. Honouring their valuable time, obliging to their requirements for suitable time and place for interview and being sensitive to their circumstances added to the development of trust. Any information unveiled at the interviews was treated with utmost confidence and respect. Participants reciprocated to this mutual relationship by being willing to entrust me with their rich and varied experiences.
3.3.3.3 Data management

Transcripts of interviews with patients, family members and healthy participants and survey responses by patients and family members formed the data for analysis. All interviews were transcribed by a professional and reliable transcriber who gave an undertaking to maintain the confidentiality of the information contained in the taped interviews. The transcripts were checked for accuracy against the original audiotape of the interview (Wellard & McKenna, 2001). The transcriber was provided with instructions to record expressions, pauses, and gaps and of the conventions to be followed. West (1996) suggests that it is imperative to preserve these expressions and therefore field notes were maintained to supplement audiotaped interviews. Field and Morse (1985) recommend 'word for word' transcription and also propose using page numbering and wide margins, which enables making comments about the transcript at the appropriate places in the document. These recommendations have been followed and confirmed in this study.

Transcribed data were entered into the data management software package QSR NUD*IST Vivo (NVivo, 1999). Use of this software program enabled the storage and management of large volume of non-numerical data consequently facilitating data analysis. Demographic data were entered into the statistical software package SPSS, version 11.5 (SPSS, 2003).

3.3.3.4 Incessant interplay of data collection and analysis

A number of aspects of the study were mutually dependent and their application occurred in a circular manner where I moved to and fro between data collection and analysis, rather than implementing one in its entirety prior to moving on to the next. Lincoln and Guba (1985) acknowledged this non-linear approach as an important facet of naturalistic inquiry. Data collection and analysis occurred concurrently and data analysis was guided by the constant comparative method of analysis (Dye, Schatz, Rosenberg & Coleman, 2000; Glaser & Strauss, 1967;
Lincoln & Guba, 1985). Inductive analysis was used to sort data into categories that provided descriptive information about the study context.

In a naturalistic study there is an inseparable relationship between data collection and data analysis, where analysis frequently imposes amendments in data collection strategies (Appleton & King, 1997; Erlandson et al., 1993). Recorded interviews on audiotapes were fully listened to on the same day as the interviews were conducted. Dialogues that were believed to be important to this inquiry were re-listened to in order to capture their meaning. This initial analysis generated questions for ongoing data collection and ensured an increased understanding of the study context. Transcripts from interviews were coded and reviewed to identify major and minor categories. Common and contrasting categories across the illness experience, health beliefs and behaviours and knowledge of CHD were scrutinised and were revised and refined as new insights emerged. This incessant interplay of data collection and analysis facilitated the emergence of joint constructions. Data analysis continued throughout the entire process till the interpretations were written and re-written a number of times until I was confident that the findings faithfully represented the reality constructs of the participants.

3.3.3.5 Refinement of the research design
Design in a naturalistic study is not fully established before the study begins and emerges as data collection and preliminary analysis is conducted (Erlandon et al., 1993; Lincoln & Guba, 1985). A naturalistic study design thus remains uncertain until it is fully implemented. Initially only patients and family members were recruited into the study and formed part of the study sample. However, the incessant interplay of data collection and analysis in this study not only helped to add to the research questions that enabled a wider exploration of study context, but also allowed inclusion of ‘healthy’ participants into the study. Thus the initial analysis of data from patient and family member interviews paved the way for a richer study by enabling data collection from the perspective of ‘healthy’
participants. As the study design emerged and established progressively, more sophisticated interpretations arose from this refinement.

3.3.3.6 Data Analysis
The process of data analysis in a naturalistic inquiry is termed inductive analysis, where data is analysed during and after the process of data collection (Appleton & King, 1997). The steps of data analysis described by Lincoln and Guba (1985) were used. This included unitising, categorising and looking for patterns in the data. Use of Nvivo facilitated easy movement between categorised data and original data source that helped to comprehend the entire context. This is described as an essential aspect of the naturalistic inquiry (Appleton & King, 1997). Interpretation of study findings was achieved by constantly returning to the data source and trying to make sense of participants’ perceptions of multiple realities, which progressively developed and matured into final major and minor categories and subcategories.

3.4 Departure from the field
The process of disengagement and departure from the field occurred naturally. After the interview process, my encounter with participants ended with a social chat over a cup of coffee or tea, leaving those involved in the interview process feeling comfortable. For the participants, their involvement in the study came to an end after the interview. For me however, the process of disengagement was disturbing as there was an evolving relationship with participants not just through the interview but with repeated revisiting of interview conversations through transcripts and data analysis. Throughout the process of data analysis and writing up of the theses it was evident that I was more engrossed with the participants and understood them even better even though I did not have further contact with them. At the end of the each interview I offered to send a copy of the study summary to the participants if they were interested. Finally, on completion the participants will be notified of the availability and library location of this thesis.
3.5 Ethical issues

In this section the process used to instigate and maintain ethical standards into the research process in order to safeguard the rights of the participants will be discussed. Ethics approval was obtained from the Human Research Ethics Committee of University of Western Sydney before commencing the study. There were no added risks or benefits from participating in the study, the decision to participate was entirely voluntary and did not attract any financial incentives. Participants received Information sheets and consent forms prior to data collection. The nature of the study was explained to each participant before obtaining written consent. Participants could withdraw from the study at any stage and refuse to answer any question without any negative consequences. Contact details of the area counsellor were included on the information sheet that was provided to all participants before commencement of the study in the event of psychological distress or discomfort. None of the study participants required any counselling.

The small sample size and use of thick description (Geertz, 1973) could result in the identity of participants being revealed. In order to ensure privacy and anonymity of the participants all information was treated confidentially, each participant was given a code name and identity of the participant was not revealed to anyone by the researcher. In cases where direct quotations could possibly be attributed to a participant, information such as the name of the hospital or doctor, area of residence, and other personal information that could reveal the identity of the participant was either changed or deleted from the quote. For the purpose of presentation in this report, patients are identified as P, family members as FM and ‘healthy’ participants as HP against their pseudonyms. No identifying data are revealed in any report or presentation. Data including audiotapes, computer discs and printouts are stored in a locked filing cabinet in the researcher’s office. Data will be stored securely for at least five years according to NHMRC guidelines (NHMRC, 1999), after which they will be destroyed if no longer required. Audiotapes will be erased, hard copies of
data and transcripts will be shredded and data on computer discs will be erased and discs destroyed.

3.6 Quality of inquiry

The quality of a naturalistic inquiry is judged by its trustworthiness, the nature of the hermeneutic process and its authenticity (Guba & Lincoln, 1989; Lincoln & Guba, 1985). The application of these criteria to ensure the quality of this study will be described in this section.

3.6.1 Building Trustworthiness

Guba and Lincoln (1985) have projected an alternative set of trustworthiness criteria for a study guided by the constructivist paradigm as the conventional criteria of internal validity, external validity, objectivity and reliability are inappropriate for this method of inquiry. These alternative criteria include credibility, transferability, dependability and confirmability respectively (Guba & Lincoln 1989, Guba & Lincoln, 1994; Lincoln & Guba, 1985). These criteria play an important role in building and enhancing trustworthiness of the research (Shenton, 2004; Tobin & Begley, 2004). Schwandt (1994) proposes that the most significant criteria for judging trustworthiness of a constructivist research is functional fit where the findings of an inquiry fit into a given context and whether the inquiry and its results allow the researcher to achieve goals. The strategies used in this study to achieve trustworthiness criteria are explained in the following paragraphs.

3.6.1.1 Credibility of the inquiry

The extent to which the findings of a study symbolise the multiple constructed realities of the participants involved is termed credibility (Lincoln, 1995). Therefore the credibility of an inquiry, addresses the issue of ‘fit’ between participant’s views and the researcher’s representations of these views (Scwandt, 2001). A credible inquiry is often vague in terms of defining boundaries and precise relationships but extremely rich in providing depth of
meaning and richness of understanding (Erlandson et al., 1993). In order to accomplish this, Guba and Lincoln (1989) have projected a series of approaches of which prolonged engagement, maintaining a reflexive journal, and peer debriefing were used in this study.

### 3.6.1.1 Prolonged engagement

Lincoln and Guba (1985, p. 304) state that “prolonged engagement provides scope and persistent observation provides depth” for the study. These two techniques are used to establish the credibility of the study and establish rapport and trust with the study participants. Erlandson et al (1993) report that in order to achieve prolonged engagement and establish credibility, the researcher must spend enough time in the context under investigation. This implies the researcher must spend enough time in the culture being studied in order to understand cultural interpretations (Erlandson et al., 1993). Prolonged engagement in this study was established through the following ways:

- **Through the interview, which initiated my engagement with participants.** This study was conducted in the participant’s residence. Apart from initial telephone conversation with participants the only prospect I had, to meet the participants was at their residence just prior to commencing their interviews. I availed this opportunity to build sufficient trust with the participants and as described in section 3.3.3.2.1.2 my cultural and professional background perhaps, were integral factors which contributed to develop a rapport with the participants.

- **Repeated listening of interview tapes and re-reading interview transcripts was the major factor that helped in the process of prolonged engagement with the participants’ world related to CHD.**

- **Being part of the Indian culture and having experienced CHD from a family member’s perspective facilitated the process of prolonged engagement.**
Supervision of entire research protocol including analysis helped in minimising the threat of misconceptions that could arise from insider research and facilitated development of shared constructs. Throughout the interviews I recorded my observations and maintained a reflexive journal that helped to sort information relevant to the study and determine what was significant.

3.6.1.1.2 Peer debriefing
Peer debriefing is used to explore facets of the inquiry that might otherwise remain implicit within the inquirer’s mind and is an essential technique useful in establishing credibility (Lincoln & Guba, 1985). Ongoing discussions about my concerns with a close associate from the same profession enabled me to learn to step out of myself and view life from participant’s point of view. It also helped in refining various aspects of the emerging study design. This support was also obtained from fellow research students with whom issues about the study protocol was shared and discussed at various workshops and research colloquia. Erlandson et al. (1993) suggest that a member of one’s doctoral committee should not be the peer debriefer as he/she is an authority relationship with the researcher. However it needs to be acknowledged that my supervisors played a vital role in providing this support and helped to vent frustrations and emotions that could obscure the research process.

3.6.1.1.3 Member Checking
It is argued that member checking is not methodologically sensible, is impractical and unethical at times and as well can make reporting of unpleasant findings difficult (Gallagher, 1995; Hammersley, 1992; Morse, 2002; Smith, 1993). Lincoln and Guba (1985) recommend that the inquirer is not obliged to include all response received and should consider its significance. This could result in researcher bias. In addition member checking is not considered to be useful as most people seek to identify their own opinion and not consensus of opinion (Appleton & King, 1997). Following discussions with my supervisors it was decided not to use the member checking process.
3.6.1.2 Transferability of findings

The observations from a naturalistic inquiry are defined by the precise contexts in which they occur, are time bound and no true generalisation is possible (Erlandson et al., 1993). Transferability is used as a measure rather than generalisability (Erlandson et al., 1993; Guba & Lincoln, 1989; Murphy, Dingwall, Greatbatch, Parker & Watson, 1998; Tobin & Begley, 2004) and is concerned with the degree to which findings are applicable to other contexts. It is dependent on the degree of similarity between the two settings and is facilitated by two strategies, thick description and purposive sampling (Erlandson et al., 1993; Robson, 1993).

In this process of inquiry, precise and sufficiently detailed description of the setting, participants, data collection and analytical procedures have been presented to the reader. As suggested by Erlandson et al. (1993), the search for data must be guided by processes that will provide rich detail about the context. For this study a purposive sampling procedure governed by emerging insights about what is relevant to the study was chosen. Actual voices of the participants have been used as direct quotes, enabling the reader an effective understanding of the context. This thick description hopefully will facilitate those wishing to apply the findings within their clinical context to make their own judgements of integrity and similarity.

3.6.1.3 Dependability and confirmability of findings

Dependability refers to the criterion of consistency (Erlandson et al., 1993; Lincoln & Guba, 1985). It refers to the assumption that replication of the study with equivalent instruments to the same or similar respondents under the same or similar conditions will yield similar measurements (Erlandson et al., 1993; Guba & Lincoln, 1989). Dependability is ensured through maintenance of an audit trail, where others can examine the documentation of research notes and data, methods, decisions and end product of research (Tobin & Begley, 2004).
The extent to which the product of inquiry is truly representative of participant’s stories and not simply prejudiced by the researcher’s point of view is referred to as confirmability (Guba & Lincoln, 1989; Tobin & Begley, 2004). Inquirers are accountable for ensuring that the research protocol is traceable, logical and well documented (Schwandt, 2001). The dependability and confirmability of the findings in this inquiry process was addressed by maintaining a reflexive journal and interview notes, by recording all methodological decisions and by making sure that data interpretations arose genuinely from the sources that could be traced back.

3.6.2 The hermeneutic process

As discussed by Guba and Lincoln (1989) the hermeneutic process restricts impending error in the analysis to occur or go undetected and acts as its own quality control feature. Application of the hermeneutic process to this study has enabled the development of shared constructs, thus alleviating erroneous outcomes or the possibility of researcher biases being presented.

3.6.3 The criteria of Authenticity

Erlandson et al. (1993) stress that trustworthiness in itself is not paramount as a determinant of quality in a naturalistic inquiry and is only a measure of methodological adequacy. The constructivist paradigm takes its strength from the creation of multiple realities by individuals and these realities must be given status in the life of people in the context in which they operate (Guba & Lincoln, 1989). Enabling this status by the naturalistic researcher is referred to as authenticity characterised by fairness, ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity (Erlandson et al., 1993; Guba & Lincoln, 1989). Authenticity is regarded as a feature that is unique to naturalistic inquiry (Schwandt, 2001). Demonstration of a wide understanding of personal constructions of the phenomenon being studied is referred to as ontological authenticity (Guba & Lincoln, 1994; Tobin & Begley, 2004). The ability to help people appreciate others’ perspectives is regarded as
educative authenticity (Tobin & Begley, 2004). Catalytic authenticity is verified by stimulating some for action and tactical authenticity is established through the process of empowerment (Guba & Lincoln, 1994; Tobin & Begley, 2004). This section describes the ways in which these authenticity criteria are met.

The descriptions of all the participants in the study were taken into account and informed consent was renewed before commencing the interviews. In addition, responding to the emergent nature of the process ensured fairness to the inquiry process. Both consensus and conflicting descriptions were considered in order to present an unbiased view of the situation. Participants had an increased understanding of their own and other’s constructs by being involved in the study. They gained insights into their own experience and reflected on descriptions of others, a process facilitated by the system of incessant display of data collection and analysis. Involvement in the study, being listened to and development of refined constructs was an empowering experience for participants. This was evident in the discussions and interviews with participants, thus ascertaining the norm for tactical and catalytic authenticity.

3.7 Methodological limitations
This study has been limited by the fact that all interviews were conducted in English. While the majority of participants were from a non-English speaking background, all were fluent in spoken English. However, their stories, interpretations and constructs would possibly be enhanced when expressed in their mother tongue. Language shapes and constructs experience and the totality of shared constructions among a human group is the foundation of their language and their culture (Erlandson et al., 1993). Due to existing issues in using translation such as associated costs and lack of availability of reliable and validates measures (Daly et al., 2002), it was decided to interview the participants in English.
3.8 Conclusion
The constructivist paradigm pioneered by Lincoln and Guba (1985) has informed this inquiry. This chapter has discussed the philosophical underpinnings of the paradigm and the inquiry process. Methods of data collection and analysis have been discussed. Hopefully this chapter has made the context of the study clear to the reader. In the next two chapters (Chapter 4 & Chapter 5) the participants' stories are presented to the reader.
ABSTRACT: CHAPTER 4

Chapter four presents patients’ and family members’ experiences of coronary heart disease. The chapter also presents participants’ knowledge of risk factors for coronary heart disease. Twenty-nine migrant Asian Indians participated in this study. Patients’ and family members’ journey through the cardiac illness was multifaceted and associated with feelings of shock, anxiety, apprehension and fear. Family members faced difficulties in implementing healthy lifestyle changes after the cardiac event. Most participants were fairly knowledgeable about risk factors for heart disease, although they perceived that there was a general lack of awareness of risk factors amongst other migrant Indians. An unhealthy lifestyle, stress and family history of heart disease were regarded as being contributory to coronary heart disease. However, knowledge of risk factors for heart disease did not help participants to follow a healthy lifestyle. Parts of this chapter including perspectives of family members and lifestyle factors have been published as articles in peer-reviewed journals as indicated in Appendix 1.
CHAPTER 4 - INDIANS AND CHD: EXPERIENCES AND RISK FACTOR KNOWLEDGE

4.1 Introduction
The research design and methodological approach used to direct and inform this study were elucidated in the previous chapter. This chapter will present patients’ and family members' experiences and perspectives of CHD. Lifestyle modifications after the cardiac event and precautions taken by patients and family members to prevent a new or recurring CHD event will also be described. This chapter will also portray participant’s knowledge of risk factors for CHD. Participant’s health beliefs and behaviours in relation to CHD and the impact of migration on knowledge and health behaviours will be described in the following chapter.

I wish to begin this chapter by illustrating the demographic features of the participants. This will be followed by a description of the manner in which interview findings will be represented. Subsequently, the analysed interview data for Indians who took part in this study will be presented. The findings will then be summarised and will be followed by a conclusion to the chapter.

4.2 Demographic features
Twenty-nine Indians participated in this study. This included cardiac patients (n=8), family members of cardiac patients (n=5) and ‘healthy’ participants (n=16). Of the eight patients who were diagnosed with CHD, six were hospitalised with an acute myocardial infarction and two patients had a quiescent myocardial infarction consequent to blocked coronary arteries. The participants had migrated to Australia not only from India, but also from other countries such as Fiji and Africa. Table 1 represents the demographic profile of patients, family members and ‘healthy’ participants. As illustrated in Table 1, the majority of the participants (n=26) had tertiary education and this
is expected, particularly among Indians who migrate to Australia and other countries such as Canada, UK and USA, where majority of Indian migrants are tertiary educated (Centre for the Study of Indian Diaspora, 1996).

Table 1: Demographic profile of participants

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Patients N=8</th>
<th>Family members N=5</th>
<th>Healthy participants N=16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Female</td>
<td>3</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30 Years</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>31-40 Years</td>
<td></td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>41-50 Years</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>51-60 Years</td>
<td>2</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>61-70 Years</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>71-80 Years</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Country of Birth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>6</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Fiji</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hindu</td>
<td>5</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Christian</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Sikh</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>2</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Tertiary</td>
<td>6</td>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>
The participants were employed in a variety of areas including health, engineering, administration, teaching and public service. The employment status of participants and common areas of employment are represented in table 2.

**Table 2: Employment profile of participants**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Findings (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
</tr>
<tr>
<td>Unemployed/Retired</td>
<td>3</td>
</tr>
<tr>
<td>Employed</td>
<td>26</td>
</tr>
<tr>
<td><strong>Area of employment</strong></td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>8</td>
</tr>
<tr>
<td>Engineering</td>
<td>7</td>
</tr>
<tr>
<td>Administration</td>
<td>6</td>
</tr>
<tr>
<td>Teaching</td>
<td>3</td>
</tr>
<tr>
<td>Public Service</td>
<td>2</td>
</tr>
<tr>
<td><strong>Health and health related areas</strong></td>
<td></td>
</tr>
<tr>
<td>Health researcher</td>
<td>3</td>
</tr>
<tr>
<td>Hospital Scientist</td>
<td>1</td>
</tr>
<tr>
<td>Optometrist</td>
<td>1</td>
</tr>
<tr>
<td>Dietician</td>
<td>1</td>
</tr>
<tr>
<td>Nurse</td>
<td>1</td>
</tr>
<tr>
<td>Social Worker</td>
<td>1</td>
</tr>
</tbody>
</table>

A majority of the participants did not smoke (n=24). Five participants (two patients, one family member and two healthy participants) had a history of moderate smoking. Five participants presented with history of regular alcohol consumption, 12 participants did not consume any alcohol and 12 participants consumed alcohol only rarely and in very small quantities at social gatherings.

Four patients had coexisting diabetes (Type 2) of which two patients had coexisting hypertension. Family history of diabetes (Type 2) was present
amongst 20 participants (4 patients, 4 family members and 12 ‘healthy’ participants) and family history of heart disease was reported by 24 participants (6 patients, 4 family members and 14 ‘healthy’ participants).

4.4 Portrayal of findings from this study
Analysis of transcribed interview data enabled the synthesis of major, minor and sub-categories, which will be discussed with exemplars from individual interviews. Pseudonyms have been used for each participant against the quotes, in order to protect their privacy and to maintain confidentiality. Pseudonyms for participants have been chosen in a manner that allows their religious identities to be maintained, with a Hindu name being chosen for a Hindu participant, a Christian name chosen for a Christian participant and so on, thereby imparting the religious faith of each participant to the reader. Against each pseudonym a suffix - P for patients, FM for family members and HP for ‘healthy’ participants are used to identify the sub group to which each participant belongs. Survey data for patients and family members will be represented with another suffix –S consequent to – P or – FM.

4.5 Findings
For the participants, the experience of CHD was multifaceted with the Indian culture having a major influence on the illness experience. Participants often associated the concept of ‘Being Indian’ to a variety of factors which influenced their knowledge and risk factor perception in the context of CHD. Participants CHD experiences and their knowledge of risk factors in relation to CHD are represented in the following sub-sections under two major categories as shown in Table 3.

Table 3: Participants’ CHD experiences and knowledge of risk factors

<table>
<thead>
<tr>
<th>Major Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Being Indian in Australia: Participant’s experiences of CHD</td>
</tr>
<tr>
<td>• Being Indian and CHD: Knowledge of risk factors</td>
</tr>
</tbody>
</table>
4.4.1 Being Indian in Australia: Participants’ experiences of CHD

Though a strong history of cardiac illness in other family members always put them in fear that it could happen to them or their partners, patients and family members were nonetheless shocked and concerned when the cardiac event occurred. It was hard for patients to believe that they had been the targets of an acute cardiac event. Most often the very first question they asked themselves was: “Why me?” (Raj-P) and: “The doctor just didn’t expect it to happen to me” (Lisa-P). Similarly when participant Pramod (P) had a heart attack none of his friends and family could believe it: “Everybody was surprised! How could it happen to me? …Especially at that young age. Not to me, because I was so healthy and athletic”.

Having a heart attack was perceived as something that wouldn’t happen to them: “Thought it was mild indigestion, never thought heart attack” (Lisa-P). However after the cardiac crisis occurred participants felt: “It is better when you have a problem, to find it and have it fixed than have a heart attack again” (Rani-FM). Patients and family members’ journey through the CHD event was multifaceted and associated with fear, anxiety and apprehension about the future. Participants’ convoluted journeys through the CHD trajectory are presented under the following categories as illustrated in Table 3:

Table 4: Being Indian in Australia: Participant's experiences of CHD

<table>
<thead>
<tr>
<th>Minor Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reacting to the cardiac event</td>
</tr>
<tr>
<td>Being perplexed by the cardiac event</td>
</tr>
<tr>
<td>Lifestyle changes after the cardiac event</td>
</tr>
<tr>
<td>Being disappointed with the health care system</td>
</tr>
</tbody>
</table>
4.4.1.1. Reacting to the cardiac event

The cardiac incident was described by participants as that which came as a shock, was unexpected and was difficult to go through. Lisa was sad that this had to happen to her at a good time in her life, where she was seeing her children settling down in their jobs and she was planning to enjoy her retirement with her husband. She intended to work for the next two or three years to make her retirement more comfortable. Just being able to do her normal household chores without depending on her children for any support, going out for walks with her husband, having small holidays and enjoying her grandchildren was something she had planned for. The heart attack, something she least expected therefore came as a huge shock: “That was terrible. It was really bad what I was going through” (Lisa-P).

Participants described the period after the occurrence of the cardiac event as a difficult and very vulnerable period in their lives. Dealing with a health crisis that came as a shock and prospects of a bleak future health wise, subsequent to the cardiac event made it an extremely difficult period for patients and their family members. The most difficult period was described to be the one immediately after the occurrence of the cardiac event: “Those eight or nine days, it was very bad!” (Nisha-FM). Rani a family member felt she and her daughter were hit with a crisis when her husband was hospitalised with a heart attack: “It was very very hard; we just like had to have our life turned upside-down”. Despite the support of other family members patients perceived that they were lonely through this difficult period: “Nobody knew what was going on, because nobody had been through what I was going through. A life shock on the system” (Lisa-P).

Patients perceived that their most important source of support was from their family: “The main support was from my wife and children. They tried to encourage me and attended to my needs in a pleasant and helpful way” (George-P-S). In addition the patients considered themselves to be their own source of support: “Self and family support. Wife and daughter undertook to complete the house project regardless. They agreed to share additional responsibilities during the period” (Varun-P-S). For participant Druba (P-S),
the main source of support was his own mental strength. Lisa (P) also appreciated and acknowledged the support provided by the doctors and nurses in addition to the support from her family:

My family supported me and my children. Talking to me, giving me advice about other people who had gone through the same operation and gave me all the support and encouragement. The doctors and the nurses visiting me spent time talking to me on the phone (Lisa-P-S).

Rita, a single parent, who was struggling to raise her two children, was so scared for the future of her children. She feared that the complications of CHD and the possibility of her death would impact on her children. It was difficult for Rita to describe how exactly she felt after being diagnosed with a cardiac illness: “It is a real strange feeling. A feeling of doom! It is frightening” (Rita-P). Fear of imminent death consequent to the cardiac event was a huge concern for both patients and their family members. Lisa (P) said she was besieged with fear for her life when she had an acute cardiac event and many a times raised this concern with her family and her doctor: “I said I am going to die”. Reassurance from her doctor and other family members and their ongoing support helped her overcome her fear of dying. However, there seemed to be an ongoing worry and fear on Lisa’s face that was evident during my interview with her, particularly when she spoke about how she felt after the cardiac crisis.

Mary (FM) was deeply concerned for her husband’s health and feared about the possibility of his death. She was worried that: “He might not survive the operation (Angioplasty)” and when her husband’s operation was a success she was happy about the outcome. Mary’s (FM) unrelenting worry for her husband and fear of any untoward outcomes such as the possibility of his death, were often expressed at the interview. She felt her husband had devoted so much time and effort in bringing up their children and it would be a big disappointment for her if he wasn’t there to see them settle socially and financially:

I cried within, feeling sad that after a hard life raising the family, he had developed a life threatening disease. I was also upset about the prospect of his
dying early, before he could see his five children settled. My biggest fear is that his heart disease might cause him to have a sudden heart attack or sudden death. This would be a very shocking event should his death occur under such circumstances (Mary-FM-S).

The ramifications, the cardiac event had on their lives caused considerable distress for patients. A major concern for patients was doubts about the possibility of having normality in their lives after receiving treatment for their cardiac problem: “I did not have a great deal of fear. I was prepared for the worst. The only fear I had was that even if the operation is successful would I have a normal life afterwards” (Dev-P-S). The rationale behind patients wanting normality in their lives was more for the benefit for their family, as they always prioritised their family over their health. Although patients were aware that their families were always there to care for them and that they did not have to worry about being supported in every possible way from their families (as this was part of the Indian culture), they personally did not want to trouble their family members. This aspect is discussed in detail, further in this chapter.

Patients did not want their health situation to worsen eventually and impact on their family members. The possibility of becoming a burden on their family members was a huge concern expressed by patients. In no way, patients wanted their health situation to impact on their family dynamics and normal functioning: “I should not become bedridden and be a burden to my family members” (George-P). Concerns for the well-being and comfort of their family members and financial burdens forced patients to resume a normal working life as soon as possible:

I was worried that I may not be able to go back to work; I won’t be able to have a normal life. I was worried about my children and my grandchildren. Lots of things flashed through my mind about my husband (Lisa-P-S).

Occurrence of the cardiac problem accentuated pre-existing hardship and difficulties in families. Asha (FM) described their social situation as hard because she and her husband had a child with a disability and she remarked:
“Very hard. As it is, our social life is hard anyway with the boy, but having the heart attack has made it quite hard”. Mary (FM) also realised that she had to constantly keep a watch on her husband’s health and make compromises in her life. She felt she had to be there for him 24 hours a day and constantly keep a watch on him and make sure he ate the right food and took his medications and be wary about his health. This meant she could not do many preferred activities such as socialising with friends and going away on holidays, which she loved to do. Therefore this was perceived to be stressful:

*It has meant more need to be vigilant about any signs of heart disease, so this has caused low level, continuous stress. The heart problem has meant that he has to be more careful, cannot undertake long, tiring journeys, which I would like to make.*

Patients also felt that the cardiac event had changed their attitude to life and they also changed as a person. There were physical limitations in what they could do on a day to day basis after being diagnosed with a CHD. However, patients were reassured that their family members realised their limitations and provided all the necessary support:

*I started taking life easy. No rushing to do things. Before I was a person I like to do things perfect. It has to be done then and there. Now I think if it is not done it can wait. Yes I have become very calm and quiet. Lots of things I want to do, I can’t do. I just take one day at a time. My family also know that. I can’t do like the way I used to do before. For example if my family rings up and say they are coming, I would cook a big meal for all of them. Now I can’t do that and my family knows that* (Lisa-P-S).

Mary (FM) felt that her husband’s cardiac event had forever changed her attitude towards him and that she had mellowed down and changed as a person because of her husband’s illness and subsequent operation: “*It has made me more solicitous and concerned about my husband’s health; and it has made me more gentle and tolerant in my treatment of him*”. For both patients and family members preventing further damage to the heart and consequently maintaining optimal health was of prime importance: “*I am very unhappy about having the heart attack and I want to try and stop from having*
another one” (Rita-P) and “I became very cautious in my day to day activities such as taking food and medication” (George-P).

4.4.1.2 Being perplexed by the cardiac event

Patients were unconvinced about the occurrence of the cardiac event and were at a complete loss as to why they had been targets of the event. Even months after the cardiac event patients were uncertain about the reason for their cardiac illness: “I can’t think of a single reason why it happened. I am at a loss to what exactly caused that” (Raj-P). Raj (P) had always been conscious of his health and always made sure that he ate healthy food and exercised regularly. However, having a heart attack at an early age (under 45 yrs) was something that he had not anticipated:

I was very interested in maintaining good health right from the beginning. I come from [a family] where my parents were very particular about eating well, living well. Even though we were short of money and other things, more than good clothes the food in the plate that had to be very healthy food.

Raj’s doctor suggested that it was his lifestyle, which was contributory to his illness. When Raj explained that his lifestyle was not unhealthy the doctor then suggested: “It must be your bad genes”. Raj recalled his doctor’s words at the interview and then he continued to say: “My parents don’t have this. I was under lot of stress. I had lost my job and the family expectation of me was very high. I was not able to meet those expectations. But the doctor said stress is only a secondary factor”. It was hard for Raj to accept that he had a heart attack and he was puzzled why it happened to him. This bewilderment was experienced by other participants, who also did not expect that they would have a heart attack: “I felt I was too young to have had this problem” (Varun-P).

Both patients and family members were unsure why some people developed CHD and others didn’t, even though they had comparable dietary habits and lifestyle. They were at a loss when their partners were hit with a health crisis (CHD) and wondered why they had developed the illness. As one participant Nisha (FM) speculated: “The food he was eating, I was eating too and I don’t
have anything”. She was also puzzled when her husband had a heart attack as she considered his cholesterol levels to be not that high in comparison to others: “Maybe he had a high cholesterol but he never, we never thought he would have a heart attack you know because it was only 6.5 and some people go up to 10 and don’t have a heart attack”.

Family member Asha could never imagine her husband could have a heart attack as she considered his dietary and exercise habits to be healthy: “He was a very healthy person. Always the envy of everyone. Everyone used to say ‘You are a good role model,’ I mean I would eat cakes and stuff, but he would never”. Correspondingly, Pramod (P) was confounded when he had a cardiac crisis:

We try and do the right things, try to eat the right foods. Maybe no one else would ever believe that I had a heart attack because I was so healthy and running around and so fit. I can’t think why this happened.

4.4.1.3 Lifestyle changes after the cardiac event
Family members encountered difficulties in implementing changes to lifestyle after the cardiac event. In particular, female spouses found it difficult to control their partners’ intake of foods rich in fats and sugar. Nisha (FM) was concerned that her husband still preferred fried foods even after a diagnosis of CHD. He would not compromise on baking or grilling food and was determined to eat deep fried food. She was not comfortable in cooking against his wishes, as she was worried that might upset and anger him: “We fry a lot of things; actually he likes fried foods like Samosa [Deep fried vegetable or meat filled pastry triangles]. He wants me to fry it” (Nisha-FM). Mary had difficulties controlling her husband’s sugar intake and even reducing the amount of sugar he had in his tea was a challenge: “He has quite a sweet tooth. He tried to put two teaspoons of sugar into this tea but I will give one. When he goes out and people ask him how many sugar he wants he will say two” (Mary-FM).
Participant Rani, felt despondent about the unhealthy dietary practices followed by her mother-in-law, as this practice had directly impacted on her (Rani’s) husband’s diet and consequently on his health when she mentioned: “Normally he used to have a lot of fried food, but not since we got married” and “It was very unhealthy food my mother-in-law was cooking” (Rani-FM). She always dreaded that her husband would revert back to a harmful diet when he visited his mother:

All the wrong food! High cholesterol food! I think he liked fried food. My mother-in-law used to make all these foods. When we came here he loved all these chickens. But now he is controlling it. But even now if he visits her you know that he has been having those foods (Rani-FM).

Preference for certain foods by their partners was a concern, as these foods were known to be detrimental to health. As one participant mentioned:

The only thing that Raj used to eat a lot was red meat. Now whether that saturated fat has gone into him I don’t know but apart from that I cook no fried food, no Puris [deep fried whole meal bread], nothing. Always very less oil. It is not real Indian food it is an in between and with less spices (Asha-FM).

Although family members faced difficulties in implementing healthy lifestyle changes and perceived that any modifications to lifestyle made by patients were inconsistent, realistic efforts were made by both patients and family members to initiate a healthier lifestyle. The realisation that lifestyle changes were necessary was a positive start directed at improving their health status: "I would like to have to change our lifestyle. The cooking we do with lots of oil and ghee. Stick to olive oil and I think …all this butter and red meat puts too much strain on the heart" (Meena-P) and:

...Well, of course we used to have a lot of fried food in India. Sometimes it is only after having the operation [cardiac] that you become aware. You have to change your lifestyle and diet, to control it. We are not forbidden to have spice, but salt and sugar we have to watch. Although I am not diabetic it is good to take precautions. So we have to change and compromise (Dev-P).
After the cardiac event, efforts were made by patients and family members to modify their cooking and eating habits and were cautious of the fat, salt and sugar content of foods consumed: “I don’t eat food cooked in any oil other than olive oil. I don’t have full cream milk any more. Red meat is only once a week” (Raj-P), “Since my heart problem we have cut down on salt, sugar & fat” (Pramod-P) and “He is conscious of what he eats and is aware of the risks now” (Nisha-FM). Food was more of a necessity and was no more an indulgence for patients and family members: “Before we used to sort of indulge in food. Now it is more of soup. Less salt, less oil. I mean now I am more conscious of what I eat and before it was like I would eat anything” (Meena-P). Pramod (P) stated that he had changed considerably after the heart attack, particularly his dietary habits: “Yes, Of course, I have a changed a lot. I have cut down on a lot of my drinks and still eat to live and try and make my diet as healthy as possible”.

Being targets of a life threatening illness such as CHD, patients felt they had become more aware of the risk factors for cardiac illness and were cautious about their diet and exercise: “I have become aware that Indians are at risk for heart disease and I am going for walks after the heart attack. Have cut down on salt and sugar and take less of it after the heart attack” (George-P). They felt the event had completely changed their way of life: “Actually I have changed a lot. I have cut down on my drinks a lot. Food I am taking less oil and salt and sugar and less dairy products. I am trying to cut everything possible, any unhealthy food” (Pramod-P) and:

Yes I have changed very much. I buy low fat milk, and brown bread, try and use light coconut milk. Whenever we buy anything we look at the ingredients. The heart attack has given us awareness. I try to go for walks and exercise at home. The kids bought a treadmill for me and I try and go on that (Lisa-P).

Family members also perceived that since they had made healthy lifestyle changes they did not have to worry too much about their spouses’ health in the future:

I cook a lot of boiled food now and stir-fry. He is doing exercises every day. He goes for an hour’s walk every day. We have changed our food, our
cooking oil and everything. So now we should be fine” (Nisha-FM).

Having a family member being affected by CHD, others in the family became more aware of the need to follow a healthier way of life:

Yes became even more conscious of my health. I thought I should be more careful and take care of myself. So I started going to the doctor and having my blood tests done every six months. I am also aware of what I am eating and also doing exercises (Arun-FM).

With those patients and family members who had been previously mindful about their lifestyle, only some additional changes were considered to be necessary after the cardiac event:

Well we already were conscious about diet and exercise. The only thing we had to change was that we were on full cream milk and now are on light milk. That is the only change. More fish and tuna and salmon. But apart from that we just continue (Asha-FM).

Patients also believed they had become more conscientious about their health and followed lifestyle practices recommended by a genuine health care organisation such as the National Heart Foundation, Australia or the Australian Institute of Health & Welfare, rather than blindly follow their conventional lifestyle practices without considering the health consequences such as an increased risk for diabetes, heart disease and central obesity. Nevertheless, the cardiac event had changed their attitude towards health and patients felt more responsible for their health and made efforts to eat healthier and exercise as regularly as possible:

Have become more responsible, with controlled diet and regular exercises. Before my operation I didn’t go the gym as regularly. We do not have fatty foods and have decreased the ghee [clarified butter] and butter and only use what the heart foundation [Australian] says (Varun-P).

When patients were questioned about lifestyle modifications after the cardiac event they mainly spoke about changes to their cooking and dietary habits. Physical exercise was hardly considered as a lifestyle measure. However, when further probed about the issue of modifications to exercise habits after
the cardiac event, participants mentioned about integrating daily walks into their lifestyle. As discussed by participants, lack of physical exercise and a sedentary lifestyle was attributed to the Indian culture. This aspect is discussed in detail further in chapter five in section 5.2.1.1.3.

Walking as an exercise was incorporated by patients after the cardiac event. This was initiated at the rehabilitation service that was offered to them while they were admitted to the hospital for management of CHD. Patients were provided rehabilitation services between six to eight weeks after the acute cardiac event or after being treated for CHD. At the rehabilitation program, patients were educated about diet and nutrition and exercise regime that they were required to follow and were also informed about possible health issues they had to aware of:

After the sixth week I was told I had to start rehab. First with every odd week and then it came down to once a month. The first week it was just discussions. The second week it was a bit of a walk. Third was exercises and nutritionist. Then I just continued with walking (Varun-P).

Mary felt that there could be more to the rehabilitation program as all that her husband was offered was an eight week course and was then up to him to maintain regularity in exercise and diet.

Well at the hospital they have classes about diet and nutrition/exercise and run you though some exercises. Possibly the physio could be a bit more intensive but then again I wasn’t there 24 hours a day. But certainly he did the best he could and as I said he started an 8-week course at the hospital and that’s it (Mary-FM).

Dev (P) felt that although the rehabilitation program was initially useful in providing information about future health problems that could occur and the nature of physical exercise that was to be followed, ultimately they had nothing much to offer and he was left to continue, with walking to be followed as an exercise regime:

Well, at the rehab program, they told us what kinds of problems we will be facing and what we will like to do with it. Plus exercise and that you have to continue it. Of course the gym was for a few weeks. You are built
up and after that you have to continue it. So I have no other exercise but walking (Dev-P).

However, when patients were informed at the rehabilitation program that regular walking was sufficient, they eventually preferred to do that in their own time rather than attending the rehabilitation program:

After the incident I was in a rehab program at Ryde. They asked me to do exercises and maintain healthy lifestyle. In the program itself there was lot of exercise instruments, which I used. But I was told that regular walking is sufficient. After I got my job this has reduced. But my job involves a lot of walking I walk for half an hour every day. I do normal exercises from books (Raj-P).

As expressed by patients in this study none of them went back to the rehabilitation program and just preferred to exercise at their convenience. However even this was not followed consistently:

Yes he went to program at Ryde hospital and followed that for six weeks. After that they just asked him to go for a walk and take it easy and take a walk for 20 mins everyday and maybe increase his pace while walking and increase the duration of the walk. So he did that until we moved and he found a job and everything is stopped at the moment. Which he has to continue again (ASHA-FM).

Thus, an inconsistent and irregular approach to exercise habits after the CHD event was apparent during discussions with patients and family members.

Patients who had a history of smoking (N=2) and consuming alcohol (N=5) acknowledged that they cut down on these habits. However, patients did not consider smoking and alcohol consumption as significant issues in comparison to dietary changes, as modifications to diet was considered as a more challenging task. Patients could not think of any approaches to deal with stress, as they considered stress as a part of life:“There are stresses and tensions on your life from everywhere and that is reality” (Dev-P).
4.4.1.4 Being disappointed with the health care system

Although there were mixed responses in relation to the quality of care provided by doctors and other health care services such as ambulance services, some patients (N=3) and family members (N=3) reported disappointment with the healthcare system. However, nursing care was generally perceived to be satisfactory, with family members (N=2) and patients (N=2) being particularly appreciative of the nurses for their good quality of care: “The nurses and the doctors! No complaints: Although he gave them a nice compliment for looking after him. Saying thank you and that” (Nisha-FM) and Nursing staff was OK. I mean I think that is in every hospital some nurses are good and some are not, that I have experienced everywhere. So I would say the nursing was OK (Asha-FM).

Asha was certain that something was wrong with her husband and feared there was some problem with his heart. She was frustrated with the ambulance officers who were reluctant to take her husband to the hospital, as they did not believe that he required hospitalisation, as his ECG was normal. Finally the ambulance officers yielded to her determination to take her husband to the hospital:

..I was just thinking what kind of people they are hiring here. The ambulance people are telling me not to worry and you know you could say well they are the experts, but I said no you take him. ... So they took him to the hospital.

Yet her experiences with in-patient services at the hospital were not good either. This enhanced her stresses of supporting her husband at the hospital and managing daily housework and looking after her children’s needs:

They took him off the drip and he went again with chest pains and they said well we are not sure what. I was at that stage thinking what sort of medical system do they have here? I have heard they have got the best medical system but I am not quite sure whether it is good and all that, but the experience with us had not been good (Asha-FM).
Meena (P) wasn’t sure if it was discrimination or incompetence of a particular nurse who was caring for her, when she was admitted to a hospital for management of her acute cardiac event. The care that was provided to her did not meet her expectations and she was disappointed:

In October when I was in hospital, I don’t know if they were short staffed or what but there were many times they would forget your medication and I had to remind them. Because I though I was educated enough, I reminded them but I didn’t get the care I expected and that was disappointing (Mena-P).

Mary expressed disappointment with the surgeon who operated on her husband and felt that he lacked the essential communication skills necessary for a doctor when she said: “The surgeon himself was a fairly uncommunicative person and any problem post surgery would be his lower level of communication. Very aloof, lacking in people skills” (Mary-FM).

Being kept in the dark and not being informed about the health status of her husband was very frustrating and stressful for Asha:

I am not the doctor, you people are, and I am asking what is happening and in fact you should be telling me. I mean it is a heart, we are not talking about a limb or anything, and we are talking about a heart attack here. And I have a right to know (Asha-FM).

Another family member Mary described an incident at the hospital, which she thought was hurtful to her husband as he was a sensitive person and the nurse providing the care incident was not sensitive to his needs:

One occasion when I thought the care would have been more compassionate. When he had his operation he had a urine bag (catheter) and one time he was trying to get out of bed. He spilt the catheter or urinated on the floor, because people didn’t help him get out of bed and he may not have rung the bell I am not sure. But the part of care that I am concerned with was that he was roused on by the nurse who should have realised that he was quite sensitive about calling, because you get the impression that you shouldn’t be calling, they are all busy (Mary-FM).
Asha (FM) felt she was being discriminated by hospital staff and had no choice but to accept it:

*Like you would ask, you had to wait ages. If a white person would call they would get an answer straight away. But we would have to wait and wait and wait. Asking three and four times and they might think we were a pest but I wasn’t getting an answer from them. So we have to put up with this.*

However Asha (FM) hoped this would change in the future with the system and society becoming less discriminatory. Six patients and family members in this study felt they were discriminated by hospital and health staff. However, other participants were quite happy with hospital services. Asha (FM) knew it wasn’t just her who had gone through this prejudice and there were many other Indians in Australia and in other countries, who would have similar experiences and just endure the same without complaining. She also felt such discrimination against skin colour could be experienced by people from other cultures. Although she did not blame any hospital staff in particular, she felt the health system had to somehow change its methods of care delivery and be non-discriminatory. She hoped this would change one day:

*The medical system! I hope no one has to go through what I went. The medical system has to somewhere improve and have less discrimination against black and white or whatever, that might make things more easier. I hope this research can bring some help to all Indians living abroad (Asha-FM).*

### 4.4.2 Being Indian and CHD: Knowledge of risk factors

Knowledge levels were similar and comparable between the three participant sub groups in this study, namely the patients, family members and ‘healthy’ participants. Participants’ knowledge of risk factors for CHD are presented under the following minor categories as illustrated in the Table 5:
Table 5: Being Indian and CHD: Knowledge of risk factors

<table>
<thead>
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<th>Minor Categories</th>
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<td>• Extent of risk factor knowledge of CHD</td>
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<td>• Lack of appropriate CHD preventive measures despite awareness of risk factors</td>
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<td>• Factors affecting CHD risk factor knowledge levels</td>
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<td>• Advice about CHD prevention strategies based on risk factor knowledge levels</td>
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4.4.2.1 Extent of risk factor knowledge of CHD

Conversations with participants revealed that their knowledge of risk factors for heart disease ranged from being fairly well informed to being unsure about certain risk factors. Most participants (n=27) also perceived that though they were individually knowledgeable about risk factors for heart disease, there was a general lack of awareness of high risk in Indians and uncertainties in knowledge of risk factors for heart disease in other Indians. Two participants stated that they were not aware of the risk factors: “I was not aware of the risk factors. So I paid for it” (Dev-P) and “No one has told me about these risk factors” (Rita-P). Asha (FM) mentioned that she was not aware that Indians were particularly at risk for heart disease and also she was aware of most of the risk factors, particularly about the ill effects of high cholesterol on the heart: “I knew of cholesterol and not too much fried food as it would clog your arteries and give you a heart attack”.

An issue of concern that was raised during the interview by participant Thomas was the lack of awareness about high risk of heart disease among Indian community:
I know by speaking with friends, they really don’t know that Indians are at risk. So if any messages were… you know like if any articles or any through media or whatever, …information is provided, I am sure, they will realise that they are at risk, which I don’t think they know (Thomas-HP).

Some participants were either not fully informed about risk factors or were unsure of some risk factors: “Smoking and alcohol” (Divya-HP), “Mainly smoking, continuous smoking and alcohol and maybe side effects of medicines or ecstasy or can be due to obesity, a lot of things” (Vivek-HP) and:

Yeah a little bit, maybe unhealthy food, like fat food, …maybe less exercise, more cholesterol, food with more cholesterol and that, oils, fast food, like if you are eating all these things and not getting enough exercise for your body, …maybe it may cause problem to your heart (Maya-HP).

Other participants also considered that they were knowledgeable about some risk factors such as genetic causes and stress. Participant Rani (FM) believed that the main cause for heart attack amongst Indians was due to inherited causes: “Most of the time it is genetic” and similarly another participant mentioned: “I think it is mainly family history and stress” (Varun-P).

Participants themselves stated that they needed to know more or perceived they were not at risk either due to being in a younger age bracket or because they were of lean build: “I’m sure there is a lot more we need to know” (Sandra-HP), “Because we know he [husband] is in the younger age group, that possibly he won’t get it [heart disease]. But if he was 50 then I would worry about it” (Maria-HP) and Rajiv (HP) stated: “I probably haven’t taken it seriously; … maybe because I haven’t had any health problems and also I don’t know, I tend to think that because I am skinny, I don’t have that much of a risk”.

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The most common risk factors mentioned were in relation to an unhealthy diet and lack of physical activity. Some participants were well informed. Participant Maria (HP) knew about most risk factors as mentioned at the interview: “The obvious ones are smoking, lack of exercise, high cholesterol, diet, stress can be another factor and then... other diseases, for example diabetes or hypertension can add and then also genetic”. Another participant stressed on a positive family history of heart disease as an important risk factor and also mentioned about other risk factors:

...One risk factor I believe is having it in the family... is one big risk factor and then we have the common risk factors... like the diet, alcohol and smoking is another risk factor and then also your lifestyle, how much exercise or activity you have (Rajiv-HP)

Participant Rajiv (HP) expressed his worry for his father due to a positive family history of cardiac illness. He understood that his father was at risk for heart disease:

In my Dad’s family, my Dad’s older brother he has had at age 59 about three heart attacks. His Mum died of a heart attack. He has a sister who also has heart conditions, so it is in the family. It is in the family, yes. And my Dad, I am concerned about him. He is healthy at the moment but still I am very worried. (Rajiv-HP)

Having a positive family history of heart disease was also a matter of concern for other participants: “The main thing I knew was stress and family history” (Meena-P) and:

My Mum does suffer from hypertension, so she is taking medication for blood pressure. She is someone who at the moment is at risk. I would also say that because of the family history in a way, both me and by brother are at risk,... because both our grandfathers died from heart attack, but yeah not necessarily you know due to heart disease I am not really sure maybe they were diabetic and it was related to that (Mira-HP)

Participant Rajini (HP), a dietician, spoke about the risk factors for heart disease in more technical/scientific terms when she said: “...Family history and sedentary lifestyle, smoking, high blood pressure and metabolic
syndrome like obesity, hyperinsulinemia and hyperlipidemia”. Further
discussion with Rajini about family history and its related risks revealed that
she was concerned about her children being at risk of CHD: “My husband’s
side yes,… they have got that propensity for high cholesterol no matter how
much they control their diet. It is a worry as well for my kids though”.

Mira (HP) also referred to factors that she thought were contributory to
cardiac illness such as:

I would say definitely being overweight and not
having a healthy diet and activity. lack of activity.
The only other thing is genetic factors, I am not
sure what the others are, and they are the three
main things that I know of.

A correlation was perceived between socioeconomic status and knowledge:
“When it comes to the lower income groups, I don’t think they are too aware
of the risk factors” (Emily-HP).

Participants who were affected by CHD perceived stress as an important
contributory factor for their cardiac illness:

I think stress for sure. Because the lifestyle I led in
India I had no stress. It is just pressure being put
on you from all sides. The hectic lifestyle. Lack of
sleep. Diet does play an important part too (Rita-
P).

Stress, perceived as a contributory factor for CHD, was also evident when
Lisa (P) mentioned: “Maybe all the years of stress and as children grow up
you don’t think they are the way you want them to be and to control them”
(Lisa-P). Similarly Varun (P) felt that stress in his job was contributory to his
illness:

I am an engineer and at work there was stress.
That continued for a number of years and then the
major reorganisation was taking place. That was
probably the major contributing factor and with the
reorganisation all the people that I knew were
gone and I knew I was going to be disadvantaged.
So that was probably the main thing.
Some participants had become aware from their doctor that genetic factor played a major contributory role in their cardiac illness: “I probably think it is the genetic reasons and the related stress and things. But I think it is more inheritance. And my doctor said I don’t know what is wrong with the Indians they just get this” (Meena-P) and participant Raj (P) mentioned:

I had a good discussion with my doctor. He suggested that it was lifestyle. He asked me if I smoke and I said I don’t. He said you must be eating lot of fried food and I said no. He said you must be having sugar problem and I said no. Then he said I must give up. It must be your bad genes. (Raj-P).

When ‘healthy’ participants were questioned about their knowledge of heart disease symptoms, their knowledge levels were not as high in comparison to their risk factor knowledge for CHD. Most participants mentioned chest pain as the most common symptom of heart disease: “Sudden chest pain or pain could start from the left shoulder or arm” (Priti-HP).

Participant Tej (HP) perceived that he needed to know a lot more about the symptoms of heart disease although he was aware of a few symptoms. Chest pain, redness of face, that’s what I know. I am sure there is a lot more we need to know (Tej-HP). Similarly not being aware of all their symptoms of acute CHD was expressed by Divya (HP)

I think having a dry tongue and also, pain on the left side of the chest, on the opposite side to your heart, don’t know if they are sweaty, but I am not clear, I am not informed exactly what the symptoms are (Divya-HP)

However having chest pain was considered to be a serious matter as acknowledged by Sandra (HP):

Well probably chest or shoulder pain to start off with, sweaty, maybe one sided pain, sometimes a tendency to want to go to the toilet along with that, Shortness of breath, being unable to breathe or having any pain in the chest is considered a worry (Sandra-HP).
Difficulties in recognising the symptoms of acute CHD were acknowledged by participant Rajiv (HP), who stated it was easy to confuse the symptoms of acute CHD with gastric problems:

\textit{About heart attack, I know it is really hard to differentiate. It could just be due to gas as well. I wouldn't be able to definitely differentiate and so the best thing I would do is take them to the nearest doctor} (Rajiv-HP)

Maria (HP) acknowledged that chest pain is often attributed to less serious conditions such as gastric problems: \textit{\textquoteleft\textquoteleft Yesterday, my husband said \textquoteleft I had a chest ache\textquoteright. Like first thing is, have you eaten anything which had caused you gas. You try to rule out other things\textquoteright\textquoteright} (Maria-HP).

\textbf{4.4.2.2 Lack of appropriate CHD preventive measures despite awareness of risk factors}

Being aware and knowledgeable about disease risks did not necessarily mean that actions were taken to reduce or prevent these risks. One participant who held a higher degree in Public Health stated:

\textit{A lot of people are, do have the knowledge, but I think, I can't understand the reason why. Because myself I know, probably I am a good example where you have done studies in health, you know everything about the risk factors, but you don't actually take it up in your own life} (Rajiv-HP).

Similarly participant Pramod (P) could not quite understand why other people including him were so careless in spite of being aware of the risks:

\textit{I was telling my wife the other day, we are educated enough, we have the intelligence to understand that when my father had a heart problem that I would learn from that. But I was a bit careless and I didn't do that.}

Emily (HP) perceived neglect rather than awareness was the problem in Indians. Majority of Indians she met were knowledgeable about risks for CHD. However very few of them she remarked did not worry about avoiding such risks and most of the time neglected their health despite being knowledgeable:
I haven’t like come in contact with too many people who are not aware of the risks. I don’t think it is more about awareness here, I think it is more about negligence over here, even though Indians [Asian] are aware, they really don’t bother.

Participants also perceived that it was important to apply theoretical knowledge about risk factors into disease preventive practice as remarked by participants Mira and Rajiv: “No, I think another thing that is also, is to be aware of what you know and to evaluate, are you actually putting that into practice” (Mira-HP) and as Rajiv (HP) remarked:

Probably I am a good example… where you have done studies in health; you know everything about the risk factors. Honestly, I don’t know why, I think when we study, … really we don’t relate it to daily life; we just study the theory, just try to learn it and get marks in exams. But we don’t relate it to daily life. Probably that is the reason and … even if you don’t have formal education in health, I am sure everybody who reads newspaper or watches news, are aware of the risk factors.” (Rajiv-HP)

4.4.2.3 Factors affecting knowledge levels of risk factors for CHD

Factor such as migrating to a Western country and area of occupation were regarded by participants to have an effect on knowledge and awareness of disease risk factors. Some became more health conscious and felt the necessity to stay physically fit: “I guess for an Indian, who would come to a Western country … initially they wouldn’t know the risk factor” (Thomas-HP). Thomas’ positive comments about the role of media in creating health awareness were also expressed by other participants: “Here you have actually got everything [information] you need to know about. I think most of the Indians who come here are pretty decently educated, so they can pick up from the media about all these things” (Emily-HP) and “I think the media here [Australia] actually does quite a bit to keep people aware” (Emily-HP).

The positive impact of migration on increasing health awareness and knowledge was expressed by participants: “Positive I would say that I have become more aware that I need to get physically fit” (Rajini). Area of occupation had an impact on knowledge of risk factors. Those participants
(n=9) who were employed in health or allied health sector or had qualifications in a health related field felt they were more aware than the general population about CHD risk factors. As acknowledged by Rajini (HP):

_Because I am a dietician, I have studied about the risk factors for heart diseases. Also even with my children, because they have a family history of diabetes … I feel that they are at higher risk of diabetes first and then heart diseases._

Although these participants expressed that they had become more aware and knowledgeable about CHD risk factors after migration, very rarely this impacted on their dietary or exercised habits, thereby having no effect on CHD risk reduction.

4.4.2.4 Advice about CHD prevention strategies based on risk factor knowledge levels

Participants felt change was inevitable to stay healthy. Changes to lifestyle including dietary habits and exercise habits were deemed necessary. This was considered to be imperative not just for the patients or family but for the entire Indian community: “We need to make people aware of our risks and unhealthy habits” (Arun-FM). Arun expressed concern over food that was being distributed and consumed at social and community gatherings and at religious festivals. He felt Asians Indians were aware of the unhealthy food that was being eaten at these gatherings but no one wanted to challenge tradition and cook healthier alternatives. Especially at religious functions, he thought the custom of cooking would not change as the traditional food was offered to God prior to being consumed by people from the Indian community. This ritual of cooking certain special dishes therefore could not change so easily as it had been followed for years traditionally. The type of food cooked at these religious gatherings had a special traditional significance, which surpassed the goodness or badness of food: “I think we should be more aware of what we are cooking and giving out at these functions [religious]. I mean everybody is aware but we are not doing anything. We need to change what people are doing” (Arun-FM). Participants felt that it was extremely difficult to change traditional and
religious habits and this implied difficulties in making any changes to the type 
of food consumed. On the other hand practices such as exercise and walking were perceived to be unchallenged by any traditional belief system and therefore could more easily be incorporated into their lifestyle. Daily walks were therefore suggested to be more practical and sustainable than changing dietary habits, particularly for anyone having the will to do so: “I think that in the realistic way the main advice is to keep up the exercise and walk each day” (Mary-FM).

Throughout the interview with participants there were a number of occasions, where participants made suggestions for preventing heart disease in the Indian community. Their knowledge level and risk awareness in relation to heart disease probably helped them to provide a number of suggestions. Rajini (HP) commented about generational differences in activity levels and dietary habits among Indians, which placed the younger, more affluent generations at greater risk of CHD in comparison to their parents or grandparents. As a dietician, Rajini’s advice to the Indian community was:

I would like to tell everyone please look at what you are eating. Don’t think… look we are from Indian culture, we are vegetarians, so our eating habits are good. …Because our parents lived up to 90 years of age, we are eating what they were eating. Please don’t do that. Double check what you are eating and then double check the activity you are doing and the activity your parents were doing (Rajini-HP).

Participants stressed on the importance of diet and physical exercise for Indian people when they suggested: “In my knowledge exercise gives you more fitness and a healthy diet is what gives you the immunity and wellbeing” (Jyothi-HP). Most children in India are under pressure to perform well academically and regular sports are not part of common lifestyle as in Australia. Although India has produced good players and professionals in sports such as cricket, hockey, badminton, tennis and basket ball and children often play these games on many Indian streets, very small pursue such sports as a profession and many stop playing as their educational demands (such as the pressure to perform well) increases.
As the Indian culture stresses modesty and traditional outfits such as the ‘sari’ (a long piece of material draped around a woman’s body) or ‘selwar kameez’ (loose fitting pants and long tops with a scarf) as clothing for women, they are uncomfortable to wear clothing such as swimwear. Particularly amongst Indian women swimming is not a preferred activity and many Indian women cannot swim. Sindhu (HP), felt Indian women should start swimming as a physical exercise or otherwise choose from many other choices of physical activity as alternatives to swimming:

Definitely to watch diet to start with. At least include a 20-minute or at least a 30-minute brisk walk, 3 days a week or 4 days a week if possible best if it could be 6 days, and take up things like swimming. …You normally don’t see as many Indians in a swimming pool as you would see others. I guess because of the culture, they’re conscious of what they wear and things like that. But there are fantastic exercises to go ahead and learn (Sindhu-HP).

As suggested by Thomas: “I think regular checkups, consulting your doctor about your diet and controlling it and try and get a bit of exercise whenever you can (Thomas-HP). Most participants felt that cultivating an active lifestyle at an early age would be ideal. As described previously, Indian children are encouraged to perform well academically with the parents’ main focus for children being success and achievement in education rather than in sport. From a young age, children are forced to spend number of hours in their study, therefore creating sedentary children and this lifestyle continues to adulthood. This practice could change to some extent when Indians migrate to Australia and many parents do encourage some weekly sport activities for their children. But the main focus for parents still remains unchanged with education persevered as a much greater priority over sport:: “I think with a lot of parents when it comes to studying they encourage their kids to sit and study for hours and hours and hours without actually moving themselves, which is probably not a good idea” (Mira-HP).

Similar to the perceptions by patients that stress was contributory to cardiac illness (e.g. Rota-P, Lisa-P), conversations with participant Jyothi (HP) raised the issue of stress as a risk factor for heart disease, especially for migrants,
where she felt it was vital to de-stress. Jyothi perceived that stress was a major factor among migrants. She felt the factors that contributed to stress included stress due to lack of extended family support, loneliness, difficulties in getting a job, lack of support of extended family, cultural clashes and financial stresses. Jyothi (HP) also felt that it was vital to de-stress particularly among those who had a family history of heart disease:

They need to de-stress first. I think stress is very important risks factor for this [heart disease. And if you have a family history, get it checked early. ...So prevention is better than cure later on, and also have healthy food and exercise.

Participant Shobha (HP) implemented exercise into her daily life in order to delay onset of occurrence of cardiac illness. She implemented this exercise regime as she was aware of her family history of diabetes and cardiac illness. However she strongly felt that diabetes was something that could not be prevented as it was in the family and was something inevitable. Therefore any measures she took would not prevent the occurrence of diabetes:

Well … we have a family history of diabetes and there’s a family history of hypertension. So … yes and that’s probably one of the reasons why I started doing the gym and all that. Because diabetes is something that you can’t avoid it, but if you can delay the onset, that would be better (Shobha-HP).

4.5 Summary of findings
This chapter has explored some participants’ journey (n=13) through the cardiac illness trajectory from the perspective of patient or family member. The period immediately following the cardiac illness was a vulnerable period for both patients and family members. The cardiac event was something they least anticipated and came as a shock. Participants were perplexed about occurrence of the event and were not sure why they were targets to the illness in spite of having a similar lifestyle to other family members and others in the Indian community. Patients were not sure if they would have normality in their lives and did not want to become a burden on their family members. A major worry for patients was concerns about the possibility of resuming their normal working life. Despite the support from family members a sense of loneliness prevailed amongst patients after the cardiac event.
The cardiac event caused unremitting worry and fear for family members and heightened prevailing hardships in families.

Patients and family members changed their outlook and attitude towards life and also changed as a person. Preventing recurrence of the cardiac event was of prime importance to the participants. After the cardiac event, patients realised the importance of adhering to a healthy lifestyle and made efforts to try and follow the same. However, it was not easy for family members to implement healthy lifestyle changes after the cardiac event and any changes made by the patients to their lifestyle was not consistent, with patients easily reverting back to an unhealthy lifestyle. None of the patients reported any delay in seeking emergency medical attention for treatment of their acute cardiac event.

Most participants only used the rehabilitation services for a few weeks and preferred to continue to exercise by going for walks at their convenience. However there was no consistency even with regular walks. Disappointment with services provided by the health system including ambulance services and in-patient hospital services was a significant issue raised by family members. Being discriminated by hospital staff as a consequence of being Indian was disappointing for the participants and hoped this would change in the future.

Loneliness and social isolation, bleak chances of attaining employment, racial discrimination and lack of support from extended family were perceived to be extremely stressful and consequently contributing to cardiac illness. Unrelenting stress associated with migration, indirectly impacted on their cardiac illness experience.

Most participants had a fairly good knowledge of risk factors for heart disease, although they acknowledged there was more they needed to know. However knowledge of risk factors for CHD did not prevent unhealthy lifestyle behaviours before (as revealed by ‘healthy participants’ and family members) or after the CHD and these behaviours were considered the norm of Indian
culture. Despite being well educated and some working in health areas, ‘healthy’ participants demonstrated a lack of knowledge of all symptoms of acute CHD.

An unhealthy lifestyle, stress, family history of heart disease and genetic factors were considered to be contributory to CHD. A sedentary lifestyle was initiated by Indian parents amongst their children even from early childhood where the main focus was on education with little sporting activities for children. The importance of applying theoretical knowledge of risk factors into practical lifestyle measures to prevent the occurrence of CHD was seen as essential. Changes to unhealthy dietary and exercise habits were considered as vital steps to prevent CHD. Suggestions were made by participants to compare their lifestyle activities and dietary habits against that followed by their parents.

4.6 Conclusion
This chapter has discussed the CHD experiences of patients' and family members. Participants’ knowledge of risk factors for heart disease and ‘healthy’ participants’ knowledge of CHD symptoms are also presented. I wish to conclude this chapter with a quote from a participant who had recovered from an acute event of CHD and wished to advise not only Indians but anyone who tends to neglect their health:

Actually I would like to say to anybody, whoever it is, life is such a beautiful gift of god and we have to look after it and take care of it. Do whatever is right for you so that you are healthy, because if you get sick, it is not just you; everybody in the family suffers (Pramod-P).

The next chapter will elucidate the study findings in relation to participants’ health beliefs and behaviours in the context of CHD. The impact of migration and its influence on participants' health beliefs and behaviours and CHD experiences will also be elaborated.
ABSTRACT: CHAPTER 5

This chapter discusses participants’ health beliefs and behaviours in relation to coronary heart disease and the impact of Indian culture and migration on these health beliefs and behaviours. Findings revealed the core concept of ‘being Indian’ as central to all aspects of participants’ lives. The principles of ‘dharma’ and ‘karma’ derived from the Indian culture influenced their lifestyle practices in relation to coronary heart disease. Characteristics such as putting themselves last, tolerating pain and illness, reluctance to visit doctors, having culturally informed beliefs about right and wrong health practices, the importance of pleasing others and keeping health issues within the family were perceived to be unique to Indians. An unhealthy lifestyle among Indians was attributed to the Indian culture. On a positive note, Indian culture and religious beliefs were regarded by participants to provide them with the strength to cope with illness. Migration to Australia was perceived to have both positive and negative effects on health knowledge and behaviours. Family members perspectives from this chapter have been published in a peer-reviewed journal as indicated in Appendix 1.
CHAPTER 5 - INDIANS AND CHD: HEALTH BELIEFS AND BEHAVIOURS

5.1 Introduction
The previous chapter presented patients’ and family members journey through the CHD trajectory and participants’ knowledge of risk factors for CHD. This chapter will elucidate the study findings in relation to participants’ health beliefs and behaviour in the context of CHD. The influence of Indian culture and impact of migration to Australia on their health beliefs and behaviour in the context of CHD will be discussed. Subsequently these findings will be summarised before concluding the chapter.

5.2 Findings
Participants perceived that their health beliefs and behaviours were mainly influenced by Indian culture. In addition, migration to Australia had an impact on participants’ lifestyle behaviours in relation to CHD. These findings will be discussed under two main categories as presented in Table 1.

Table 1: Participants’ health beliefs and behaviours and impact of migration on CHD

<table>
<thead>
<tr>
<th>Health beliefs and behaviours and impact of migration on CHD</th>
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<tbody>
<tr>
<td><strong>Minor Categories</strong></td>
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<tr>
<td>• Being Indian and CHD: Health beliefs and behaviours</td>
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<tr>
<td>• Being Indian migrants in Australia: Impact on health and</td>
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<tr>
<td>CHD experience</td>
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5.2.1 Being Indian and CHD: Health beliefs and behaviours

This section will focus on aspects of the Indian culture that influenced participants’ health related behaviours in the context of CHD, from the perspective of patients, family members and ‘healthy’ participants. The contributory role of culture in directing participants’ lifestyle, health attitude and health behaviour and its impact on cardiac health will be discussed under the following categories as presented in Table 2.

Table 2: Being Indian and CHD: Health beliefs and behaviours

<table>
<thead>
<tr>
<th>Minor Categories</th>
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<tbody>
<tr>
<td>• Being Indian: Influence of Indian culture</td>
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<tr>
<td>• Being Indian: Health beliefs</td>
</tr>
<tr>
<td>• Being Indian: Health behaviours</td>
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</table>

5.2.1.1 Being Indian: Influence of Indian culture

Findings revealed the centrality of Indian culture to all aspects of participants’ lives. Indian culture was deeply rooted in their beliefs, practices and everyday life, irrespective of the religion they followed. The innate principles of Dharma and Karma, fundamental to the Indian culture, directly or indirectly influenced their lifestyle practices. Participants’ perceptions of ‘distinctiveness’ of Indian culture could possibly resonate with people from other cultures also, either in the same or in different circumstances. The influence of Indian culture on participants are described under the following sub categories as depicted in Table 3:
Table 3: Being Indian: Influence of Indian culture

<table>
<thead>
<tr>
<th>Sub Categories</th>
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<tbody>
<tr>
<td>• Putting themselves last: A trait perceived to be unique to Indian women</td>
</tr>
<tr>
<td>• Having culturally informed and fixed beliefs about right and wrong health practices: Being resistant to change</td>
</tr>
<tr>
<td>• Pleasing others: Of major importance to Indians</td>
</tr>
<tr>
<td>• Keeping health issues within the family: Of importance to Indians</td>
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</table>

5.2.1.1.1 Putting themselves last: A trait perceived to be unique to Indian women

This category was more gendered in nature, being uniquely a female phenomenon. Thinking about the well being of other family members, putting themselves last, and not having time to look after themselves were perceived as being characteristic of Indian women. Their entire lives revolved around their family’s welfare. This was something the women assumed was deep-rooted in them and culturally accepted as part of being an Indian woman: “We are always thinking about other family members and don’t have time to think about ourselves. It is in our culture” (Lisa-FM).

During my interview with Lisa, she mentioned that her children had all finished their education and were employed. She then continued to say: “Even when I am cooking all I can think of is the children”. This sense of responsibility amongst Indian women for their children was so strong that they felt a sense of lifelong commitment towards them. Sandra expressed similar feelings: “Because we are Indian I guess we’ve got that thing in us that, yes we put ourselves last and put the rest of the family first” (Sandra-HP). This aspect
however was not something the women were happy with. Another participant who reflected on this practice commented:

…I’ve seen so many of my friends who just give all their time to the family and... they have absolutely no time to themselves and they justify it because they think that’s what an Indian wife is supposed to do and I think that’s like back firing on themselves (Sindhu-HP)

Participants felt this characteristic of putting themselves last put them out of step with others in Australian society. They held the view that others in Australian society gave priority to their own lives as well as the lives of their families and children. They liked this approach of many Australian women who gave priority to their own life in addition to the priorities given to their children and family. This made them feel that their mothers should also have followed this approach, taken more time to look after themselves and enjoyed life, rather than being bogged down by a sense of duty all the time:

I saw one lady, she was at that time 82 years old, Oh she was so beautiful, she used to dress up, she used to go to the Westfield and you know to clubs!. I was very much impressed and I thought, “My God, that’s the life”, my mother what she enjoyed? She just looked after us. After us she looked after my brother’s kids and I don’t know what she got for herself (Latha-HP).

Somehow the Australian approach to life where women devote time not only for their families but take time to look after themselves, was more appealing, even though they did not follow it: “In India, parents… they devote their full life to their children, fully 100%. But here they live their life too, the parents, that’s what I like” (Latha-HP). Yet, breaking the long-established cultural practice of putting themselves last was something that the Indian women who participated in this study were not comfortable with and just opted to continue to follow what was being done.
Having culturally informed and fixed beliefs about right and wrong health practices: Being resistant to change

It was extremely difficult for the participants to change their traditional cultural cooking and dietary habits. Although they were aware that consuming adequate amount of vegetables could contribute to good health, they could not consider having salad as a main meal: “Vegetable consumption is as part of our meal. But not as salads” (Maria –HP) and

\[\text{It’s both laziness and the fixed belief of what we have to eat everyday. This is what we can eat; this is the food which we know. We usually have rice or chapatti and some side dish. That’s our meal. …We cannot look at anything such as having a salad as a meal (Maria-HP).}\]

True to the saying ‘old habits die hard’; participants felt that it was very difficult for them to make any changes to the type and quantity of food consumed: “Especially Indian families, they eat so much rice, it is not really necessary to eat that much rice. But it is breaking out of the habit” (Mira-HP). In particular, one participant Mira (HP) felt that although she followed a healthy diet it was hard to control the quantity of food that she ate:

\[\text{Breaking habits! I am careful about not having, not picking sort of you know a lot of sweets, but I am not careful about quantity, that is another problem we all [family members] have…. our quantity serving sizes are too big. But you never [change], because we have got into that habit, it is hard to break out of, because you are not satisfied unless you have [enough].}\]

The resistance to change as expressed by participants was not only for modifications to dietary habits, but to a number of practices and beliefs which they were more comfortable in continuing to perform in the same manner as before. These practices included exercise habits, the notion of giving priority to one’s family over their health and not being open to alternatives in lifestyle and health attitude such as visiting the doctor only in the event of illness. This was because they had accepted these practices as part of their culture:

\[\text{I think the main thing is change, because it is very hard for us Indians to change, what we are used to and}\]
obviously with, if you are used to something you think that, that is the best thing to do. Even though there might be other options out there. So I think the mentality of Indians is, “I stick to what I know” and not try new things (Thomas-HP).

Being inflexible even dissuaded them from listening to the doctor’s or health professionals’ advice. Even in instances when the doctor advised them to have a particular test done or that they needed surgery they acted on what they felt was important to them and the doctor’s suggestions were considered as secondary. Participants felt that that they were protected against ill health and difficulties since they perceived that they were doing the right things, were religious and spiritual and were following their culture. Illness and difficulties were considered to be the consequence of wrongdoing and also their ‘karma’. They felt protected against mishaps and sickness as long as they were spiritual and followed the right path in life. As they felt they had chosen the right path and acted according to their ‘Dharma’ they did not feel it was necessary to be advised by anyone, not even the doctor as to what the right health practice was: “We are spiritual and cannot always be told what to do” (Rani-FM).

5.2.1.3 Pleasing others: Of major importance to Indians

Rather than thinking about the consequences of a particular action or behaviour, participants believed that it was more important for Indians to please others. Not hurting others' feelings was considered to be a part of the Indian culture and was something that was instilled in them from an early age. Lack of family support and reduced social support after immigration strengthened this belief in the participants, probably due to fear of social isolation. It was believed that not accepting food offered by other people would be a hurtful thing to do. This did not matter whether at that particular time whether they wanted to eat or not: “I don’ want to hurt their feelings, so I just eat whatever is offered” (Arun-FM) and “We are always worried about what others think of us” (Lisa-P). This concern for the feelings of others in their community was actually perceived to be stressful, unnecessary and impacting on health as revealed by participants:
I think we should be actually less stressed regarding our Indian community... we get to more stress in our life than anyone else. We are more worried about other [Indian] people think, what they are going to say, what they are going to do to us, than we are about ourselves (Meena-P).

5.2.1.1.4 Keeping health issues within the family: Of importance to Indians

Health and health issues were considered to be ‘family matters’, were kept very private and confidential to the family circle. According to the principles of Dharma each individual feels responsible for the well being of his/her family and within Indian families it is of prime importance to maintain the family honour. Illness or disease is not perceived as an achievement that needs any discussion outside the family unit. In some instances even close friends were not aware of any health crises that the family had gone through. Participant Varun (P) did not want to reveal his cardiac problem to any of his friends because of a perception that revealing his health problem to all his friends would only put him under stress trying to incessantly answer all their questions directed at his health problem. This was something he did not want. Nevertheless he failed to see the positive aspect of getting much needed support from his friends, not only for himself but also for his family at a time when he needed it most. He also didn’t think that his family members (wife and daughter) needed any counseling after he had the cardiac event: “They did not need any counseling. But as a family we faced everything”. Varun’s wife mentioned that when the event occurred: “I and my daughter were left to believe in God and we went through everything” (Rani-FM). She listened to her husband’s decision to not inform anyone about his cardiac crisis and hospitalization: “My husband said not to talk about it because people would put more pressure on you” (Rani-FM). Mary also mentioned that her husband was: “Not the type of person who would talk about his state of health”.

In instances where patients revealed their health problems to close friends the intensity of the problem was always toned down: “He tells people [close friends] that he had 15% heart damage but the doctor told me it was 30%” (Mary-FM).
This aspect among Indians also holds good during their appointment with health professionals where only major health problems are revealed and not many details are given as to the nature of the health problem.

5.2.1.2 Being Indian: Health beliefs

Cultural influence on participants' perceptions and understanding of health and illness were profound. Through its concepts of Dharma and Karma the Indian culture directed participants' health beliefs and practices. These beliefs and practices were often attributed by participants as a consequence of their 'Indian-ness' or being Indian. Participants' beliefs and perceptions about health and illness and coping with illness as a consequence of being Indian are discussed in Table 4 under the following sub categories:

Table 4: Being Indian: Health beliefs

<table>
<thead>
<tr>
<th>Sub Categories</th>
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<tbody>
<tr>
<td>Being healthy</td>
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<tr>
<td>Prioritising Health</td>
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<tr>
<td>Distinguishing Health and illness</td>
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<tr>
<td>Being Indian no barrier to recovery from illness</td>
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<tr>
<td>Coping with illness</td>
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<tr>
<td>Belief in the concept of vegetarianism</td>
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</table>

5.2.1.2.1 Being healthy

A straightforward understanding of the notion of ‘health’ was: “Feeling good, like being able to cope with the everyday stresses of life” (Shobha-HP). Similarly, not being tired all the time was considered a sign of health: “Being able to get up and about and do things without feeling exhausted and feeling energetic and
being able to move around, not feeling like you want to rest all the time. That’s pretty much it” (SIndhu-HP).

There were common threads in participants’ understanding of health that were identified at the interviews, with participants considering health to encompass both physical and mental aspects: “Health means excellent condition in physical body and in mental wellbeing” (Vivek-HP) and “I would say good healthy body and healthy mind. Both mind and physical” (Maria-HP). Latha (HP) had similar perceptions: “Being Healthy means to me is physically as well as emotionally stabilised”.

Although both physical and mental health were believed to be necessary for best possible health, participants perceived that mental health was more important than physical health. Any pitfall in their emotional and mental state seemed to put them down and deteriorate their health status: “Health is really like physically I should be well and mentally I should be well. But sometimes it’s the mental hard work which really gets you a bit down” (Tej-HP). For participant Latha (HP) mental well-being was the priority: “If a person is emotionally happy, he or she in my opinion that’s a great health. Everything depends on your emotions”.

Any shortfall in the state of their mental health was considered to have a direct influence on physical health with emotional problems making them more susceptible to physical health problems and vice versa and possible be a contributory factor for CHD:

For me health is not only physical health it is also mental health. What I have noticed is when I am stressed and then when I have some family problems I catch flu and other infections quite often. Also then I feel very very tired just to do my household routines. When I have a lot of other emotional problems, yes I feel that I can’t cope and then definitely I catch flu (Rajini-HP)
The ability to perform day to day normal activities was considered an essential aspect of ‘being healthy’: “When I say I am healthy, I think it just means that there is nothing that alerts my body and mind and which actually interferes with my day to day life and activities” (Rajiv-HP). Being able to perform daily activities normally gave participants a sense of being healthy and therefore no anxiety and worry about contracting CHD or any other illness. Similarly:

*Health to me is basically being able to continue with your normal activities without anything hampering you or any condition in your body hampering you and basically something that would keep you from following your normal activities. I would say and obviously health would include a lot of mental health and physical health and all of that* (Thomas-HP).

As well as getting on with day-to-day activities it was perceived that health encompassed other aspects such as a healthy lifestyle and thereby preventing cardiac illness or conditions like diabetes, which would predispose them to CHD:

*I think health means to me, being, having sort of vitality to do your day to day task. Also being in a healthy weight range, which because of my family history of diabetes, it will reduce the chances of getting that, Which is something that I have always been battling with. Also being healthy would be sort of not smoking, not having alcohol and eating healthy type of food. Also eating food that is not so oily and maintaining that sort of a lifestyle. Yeah and I don’t tend to get sick very often, I don’t get the flu a lot or anything like that* (Mira-HP).

In addition to the above-mentioned factors, participant Jyothi (HP) considered it was important not to depend on anyone in her old age. To ensure that she did not want any limiting illness such as CHD or diabetes or any life threatening illness to befall her:

*Health means not necessarily fit but able to do my daily activities and have a healthy diet and able to walk and don’t have depend on somebody in my old age to go somewhere and not have heart problems or leg problems and having the blood tests being normal as well.*
Participant Sandra (HP) came up with a concise statement to demonstrate her understanding of 'health': “Health to me means a total state of mind, body, spirit and physical and if all of those are in balance, yes I’m healthy”. Thus participants overall concept of health was to be fit physically and mentally, be able to carry on with day to day activities and not contract any life threatening illness such including cardiac problems, diabetes or cancer.

5.2.1.2.2 Prioritising Health

A frequent concept that arose during interviews with participants was the belief that Indian people prioritised making money at the cost of their health: “Indians generally want to save money, they work hard and don’t eat in a proper way and don’t do good exercise” (Vivek-HP). Yet again the notion of Dharma and responsibilities towards the well being of their family members were over and beyond their health priorities. This strong belief in the notion of Dharma meant devoting more time for the family and less time to one’s health. Neglecting health was considered to be a very common Indian trait, irrespective of the underlying condition they had and was not specific to CHD. Other life threatening conditions like cancer were also sometimes neglected:

It is very sad with my sister in law who had breast cancer and mastectomy. She did not go and have the chemotherapy even after the doctor told her she should take it. She left it for 3 years. So they neglect their health so much (Rajini-HP).

Even in the event of a health crisis their sense of duty towards their family cast away any major health issues. A male participant was very emotionally disturbed when his doctor said he had a heart problem and needed immediate surgery:

I started to cry. I had a house I was selling and finances half arranged which I knew, and my wife didn’t know and so I was asking the doctor to put it off so I could tell my wife all that is going on. And he wouldn’t listen to me (Varun-P).
The notion of making a lot of money was considered to be more a characteristic of Indians who resided in other countries outside India. This was also due to the fact that they felt responsible for their family members not only living with them in Australia but also towards parents and siblings residing in India and elsewhere and felt an obligation to support them financially. However it was also viewed as very important to build a strong financial foundation for the future of their children:

\[\text{But then again most Indians I think when they come overseas, their mentality is to try to save as much for the next generation and so [saving for next generation] a lot worse than just saving and investing [for themselves] and not much attention goes into the health I think (Rajiv-HP).}\]

This desire amongst their own community to become as wealthy as possible was considered as a very greedy characteristic: “Saving, making money, making big houses, making big car and showing off to other people who are in India” (Vivek-HP). Participants felt that this should stop and more priority should be given to their health: “Maybe give less priority to making money and more priority to health (laugh). Less priority to making money and paying off the house to getting out there and being active” (Mira-HP).

Prevailing health problems was something that did not stop Indians from continuing their unhealthy lifestyle:

\[\text{They are aware of the risk factors. I know that from my uncles, like they knew the consequences. My uncles have lost through diabetes a leg and things like that, but no it doesn’t stop them from eating what they want (Shobha-HP).}\]

5.2.1.2.3 Distinguishing Health and illness

Varied perceptions in Indians regarding health and illness were some of the issues that participants discussed at the interviews. A common perception of obesity as linked to being ‘healthy’ and prosperous was described by the participants: “In a lot of communities in India, the fatter you are the more pretty and acceptable you are as a woman” (Sandra-HP) and:
We think it is very cute with fat babies, when the kids are babies, the fatter they are the cuter they are but then we are raising those sort of adults as well and it’s not always good for their health (Priti-HP).

To the contrary, being skinny was associated with infirmity. Most Indians are generally skinny and the problem of obesity is not established as in Western societies. In some Indian families it is rare to see an obese person and therefore obesity is commonly associated with good health: “Generally I haven’t had any health problems, except that, I was the skinniest of my siblings” (Rajiv-HP) and:

In India we tend, we don’t tend to look at someone who is obese as unhealthy. People don’t think that is unhealthy, people think that is healthy and prosperous to be fat or obese, so, that is also a cause. Because I am so skinny a lot of people tell me “you look sick”, “you look unhealthy” (Rajiv-HP).

One patient who was affected with CHD thought it was something that had to happen to her as it was her Karma. Occurrence of CHD was considered by her as her fate and also to be inevitable. She did not believe that a different lifestyle that was healthier to what she followed would prevent her from having the cardiac problem. When discussing a healthy lifestyle, Lisa (P) commented: “I don’t think it is preventive”.

The perception that heart disease could occur only in the elderly led one participant to think she did not have to care for her health nor have any health checks done and did not want to restrict her diet in any way: “Not exactly, (laugh) naughty girl I should say, because I eat what I feel like eating, I want to enjoy life, that’s it, nothing much” (Maya-HP).

Although participants considered Indian culture to be responsible for an unhealthy lifestyle they did not feel that their culture was an impediment to recovery from illness. To the contrary, following Indian culture was perceived to provide them with the strength to cope with illness and difficult times. Some
participants indicated that their survival from a cardiac crisis was due to the support and moral courage provided by belief in Indian culture and in God. Cultural beliefs helped them cope with their cardiac illness and were not considered as being damaging to health: “I believe, culture I think has struck me to cope with this rather than affect it [negatively]” (Varun-P). Participants felt that Indian culture gave them the will power to endeavor hardship:

*I tried to feel strong because I have read a lot of books and studied a lot of Hinduism and our culture. Because of that I was very strong in my mind and had a strong thinking that I will not give up easily. I remember saying to myself, I will fight through this. I was very strong in my mind because of our culture* (Pramod-P).

Despite a few dietary restrictions that could be imposed from the Indian culture during certain periods of the year, where they had to either fast for a particular time in the day (during religious festivals) or could not consume meat and other animal food products, these restrictions were not strictly followed, unless an individual chose to do it. Therefore in no way these restrictions influenced the illness recovery process. Mary (FM) felt that her husband’s cultural habits and religious dietary restrictions due to his Indian background did not in any way influence his process of recovery from CHD: “*I would just say that I don’t think that his Indian background has anything to do with his recovery [from CHD] or eating or exercise [as he did not follow many of Indian religious dietary restrictions]*”.

Even though participants often talked about aspects of ‘being Indian’ some were unable to identify the influence of the term ‘culture’ in their daily lives and in relation to illness recovery. It was rather difficult for participants to split components of Indian culture that was embedded in their lifestyle and beliefs: “*I have never thought about cultural or religious aspect in my lifestyle. I think it is inbred in me*” (Rajini-HP) and was at times associated with religious practices: “*When we have the prayers we don’t eat meat but other things no. Sometimes nine days or 10 days we don’t eat meat but that is it*” (Nisha-FM).
Although George (P) acknowledged that his dietary habits and lifestyle was similar to other Indians, he perceived having lost touch with the Indian culture as he had lived outside India for a number of years: “Before here I was in Ethiopia. I was there for 5-6 years and from there to here. So a long time out of India. So I don’t think any culture has got to do with it here” (George-P). Nevertheless his belief system and ideologies in life were influenced by the Indian culture. This was apparent during conversation with George where he disclosed that he raised his children based on the Indian value system. It was also shown by a commitment at his workplace and to his family which demonstrated that Indian culture was still deep rooted in him and influenced many aspects of his life.

5.2.1.2.4 Coping with illness
The impact of culture on coping with illness was considered to be positive, with Indian culture providing participants with strength and support. Indian culture was considered to have a lot of inherent principles and values, which provided them with the strength to cope with even the most difficult situations. Although it was difficult at times for participants to draw out the influence of culture on their lives, they acknowledged it was a part of their identity and was entrenched in their values and belief system. In spite of the perceived downsides of Indian culture such as food and lack of physical activity, aspects such as tolerance, patience, faith in God’s healing powers and emotional stability were some positive attributes believed to have emanated from Indian culture: “Maybe some of the things like the food. It is the main thing. Apart from that our culture and religion is a good thing. A supportive thing. Right?” (Arun-FM) and “Like especially in Australia where we are living away from our family, we look forward to meeting with people from our culture and talking with them so that is on the positive side. It gives us a moral support” (Arun-FM).

Cultural and religious beliefs were assumed to provide the strength to cope with illness and have a positive health outcome:

Actually I would think that my survival in the hospital was about 50/50, maybe less but because of my beliefs I think
it actually helped me. I thought of my religious beliefs. I thought I am still alive. So that has made me stronger in my beliefs (Pramod-P).

To the contrary not following Indian culture was considered to be contributory to illness. For example, the cow is considered to be very sacred in the Indian culture and is worshipped on a number of religious occasions, particularly by Hindus. Killing the cow for any reason and consumption of cow meat is considered to be a crime. Participant Raj (P) strongly felt that going against the Indian culture was the reason for his CHD:

Indians don’t eat beef basically. Well I was going against the culture there anyway. If I had followed Indian culture and not eaten beef that is red meat, which is high in saturated fat, it wouldn’t have caused any harm. You know what I mean; I am not following Indian culture.

Following their culture and religion was believed to have positive effects on health despite a number of people who did not strictly adhere to their religious and cultural values:

I think our culture is towards leading a healthy lifestyle and religious wise, our religion generally tells doesn’t encourage us to eat meat anyway, but a lot of us do. So I think cultural wise if we were to follow it we would be healthier (Mira-HP).

To the contrary, it was assumed that being non religious made the individual more vulnerable to the stresses of life: “I am basically non-religious person. Probably that did not give me enough strength to cope with the stress” (Raj-P).

5.2.1.2.5 Belief in the concept of vegetarianism

Many participants believed in being vegetarian. They were vegetarian either as part of their religion or sub-culture: Being a vegetarian is part of my culture (Latha-HP). Also being vegetarian was due to their upbringing and belief system:

Belief wise, yes our religion doesn’t allow us to eat a lot of things. Ideally you should be a
vegetarian, eating more of vegetables and a lot of dairy products, so my parents were purely vegetarian. In a way we are mostly vegetarian and the only thing mum used to allow us to eat is fish (Rajiv-HP).

Although some participants were vegetarians by culture, religious practice or upbringing they continued to do so even as adults for ethical reasons:

*I’m vegetarian for ethical reasons; I just feel uncomfortable eating meat. Well I guess originally when I was a child it was more religious and cultural because my family was vegetarian but then my sisters and all went on to be non vegetarian but I was always comfortable being a vegetarian, so I’m still a vegetarian* (Sindhu-HP)

Those participants who stated that they were vegetarians either due to their beliefs or religious practices perceived that it was also healthy to follow this practice and were happy to do so:

"*We are pure vegetarian people and I believe in it. We don’t eat fish; we don’t eat meat, chicken, no. We are only vegetarian people. But in our diet we have like chapattis, dhal, rice, lentils, and vegetables. It is healthy being a vegetarian*" (Latha-HP).

Other participants who were not vegetarians also stressed that their meat intake was only for a day or two in the week and most other days they ate vegetarian food: "*We are more vegetarian, I think that’s our culture and religion. We eat meat, but culturally we are more vegetarians. Once a week or twice a week we have non vegetarian food. Otherwise its vegetarian food most days* (Priti-HP)

For whatever reason they believed in being vegetarian they were happy to do it:

*This vegetarianism may be it is cultural, I don’t know. Somehow now I am glad I am a vegetarian. I encourage it to my children as well. I ask them just to try to avoid non-veg food as far as possible. I’m not saying that eating non veg will bring on all these diseases but I think it is easier if you are a vegetarian. Also for ethical reasons, I’m so glad I’m a*
Participant Pramod (P) felt that being vegetarian during their religious prayer sessions helped him distress: “Yes I think when we have all our special prayer sessions and all that we are completely vegetarian. We have no meat or alcohol and try to be as clean as possible so our mind is stress free” (Pramod-P).

5.2.1.3 Being Indian: Health behaviours
Indian culture or ‘Indian-ness’ was considered by participants to be responsible for their unhealthy lifestyle. Entrenched traditional practices and lifestyle habits derived from the Indian culture was accepted and followed without worrying about the health consequences. These included dietary habits, physical activity and approach to health care. These practices were believed and accepted to be part of their identity as an Indian and are represented under the following subcategories in table 5.

Table 5: Being Indian: Health behaviours

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<th>Sub Categories</th>
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<td>• Tolerating illness and pain</td>
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<tr>
<td>• Indian diet: Positioned as unhealthy</td>
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<td>• Sedentary lifestyle: Common amongst Indians</td>
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5.2.1.3.1 Tolerating illness and pain
Participants felt that Indians, particularly men did not give any priority to their health. They did not discuss their health problems with anyone in the family, not
even their wives and were reluctant to go to a doctor. The men were more engrossed in providing a good quality of life for their family. They believed and practiced the principles of *Dharma* and tried to perform their duty in life as the husband, the father and the provider for the family. Health was something that was not on their priority list: “*He would tolerate things and not complain*” (Mary-FM), “*Never goes to the doctors*” (Nisha-FM) and “*He would never take even the Panadol*” [even when required] (Lisa-P).

This reluctance to visit the doctor was acknowledged not only by family members but also by the patients who participated in this study: “*I don’t care to take medicines. If I can help it I will stay away from it*” (Rita-P) and “*I go to doctors very seldom*” (George-P). Even the possibility of having an acute cardiac event as diagnosed on ECG by a doctor, was not serious enough for one male participant to heed his doctors’ advice:

> The doctor suggested I go to the hospital straight away because he felt that there was some problem in the ECG. I didn’t believe because I didn’t want to go to the hospital. The hospital was worried because it was two days and the hospital has written a letter for me that was strong (Varun-P)

Belief in God and notion of *Dharma* led participants to assume that their health would be taken care of as long as they did the right thing. Good health was correlated to ‘goodness’ and not lifestyle. In spite of following the right path, if an illness occurred it was considered their *Karma*, as something inevitable that had to be faced by them as a consequence of wrong deeds in previous or present birth: “*I believe in the fact if it’s your fate it will happen. But not because of your sin it will happen*” (Maria-HP).

**5.2.1.3.2 Indian diet: Positioned as unhealthy**

When participants talked about their dietary habits they frequently positioned Indian food as unhealthy: “*Our food is Indian; in every food we use oil. Even in our religious [functions] we use a lot of fat, and sweets*” (Arun-FM), “*We have a
religious function and we have food and wine and normally there are sweets there” (Pramod-P) and “Indian food is very unhealthy. All of that fried food” (Rani-FM).

Being aware that their dietary habits were unhealthy did not stop them from adhering to their cultural dietary practices. Religious festivals are plentiful throughout the year in the Indian culture, particularly for Hindus, Buddhists, Sikhs and Jains. The practice of offering a variety of dishes (including an assortment of sweets and fried snacks) to God during prayers on these religious occasions, and later being consumed by the family is a common practice. These dishes are not only restricted to religious occasions but are commonly cooked during social occasions and community gatherings which are also abundant throughout the year.

As these traditional Indian dishes are considered to be tasty, many Indian people enjoy frequent consumption regardless of the ill effects on health: “Still we have fried food. We still eat quite a lot of oily food, we shouldn’t be eating, and I know that” (Latha-HP) and “I do avoid oil. But when we have guests I use tons of oil cause that’s where the flavour is” (Sindhu-HP). Therefore traditional Indian dietary habits were difficult to change due to the tastiness of Indian food. However this was considered to be unhealthy: “Sometimes we develop a taste and that continues throughout life” (Priti-HP) and “I actually love fatty food (laugh) because it is so tasty” (Rajiv-HP).

5.2.1.3.3 Sedentary lifestyle: Common amongst Indians
Lack of physical exercise and physical inactivity was again culturally accepted and considered to be the norm in Indians. There was a sense of being casual about this aspect as revealed during conversations with participants: “He doesn’t engage in formal activities” (Mary-FM) and “He’s got a gym membership, but won’t go. He is lazy. I can’t force him” (Rani-FM). As discussed previously in this chapter in section 4.5.2.4, this culturally accepted sedentary lifestyle is
evident from childhood where Indian parents encourage children to spend most of their time with books and the major focus is on educational achievement with sporting activities in children being rare. Children therefore get used to this lifestyle and this inactive lifestyle continues into adulthood. With Indian values and customs being ingrained into these Indian children by their parents they continue to do the same with their children and therefore create future generations of Indians in whom sedentary lifestyle is a common finding. Again an activity such as swimming is not popular with Indian women and this could impact on these women against encouraging their children to include swimming as part of their lifestyle.

Engagement in regular physical activity was not very common amongst participants. However, there were exceptions to this behaviour with one or two participants keen to follow physical exercise regularly. Even with the few participants who followed regular physical activity the practice was initiated not very early in life and had commenced only after they had experienced other health problems in relation to CHD such as hypertension or diabetes or after they had seen their own clients (where participants were health professionals) reaping the benefits of physical activity:

*I am keen on physical activity. I try to do four times a week about one hour per day of physical activity. That is something I do get frantic about if I don’t achieve my 4-5 hrs per week of physical activity* (Rajini-HP).

For some participants their area of occupation involved standing and walking for long hours and this was considered as being healthy: *I walk for the whole day because my job involves a lot of standing and walking. I used to do yoga regularly but for the past few months I have been busy, I couldn’t do it* (Priti-HP). For those participants whose occupations were sedentary, efforts were made to include walking into their daily routine: “I go for walks. “*Basically everyday I would spend around 20 minutes walking. But this is one area I need to still improve*” (Thomas-HP).
In some instances, participants were aware that physical activity was lacking in their lifestyle and were trying to incorporate that in the future: “Irregularly every now and then we go for a long walk. But generally exercise habit is bad. We are in the process of joining a gym. But yes at the moment it is very bad” (Mira-HP) and as expressed by participant Maria (HP):

> Every time I look at my husband’s paunch or look at our weight gain I do think about heart disease and we always, more than the diet modification, we look at exercise as a means of trying to reduce the risk.

Participants were aware of the detrimental effects of an unhealthy lifestyle, but were not too worried about it and had learnt to accept this as normal and as a consequence of being Indian. These habits were not exclusive to them as an individual or as a family, but the majority of friends and social contacts in their own community were following similar lifestyle patterns and therefore it was considered ‘normal’ and acceptable in Indian society: “I mean we don’t exercise and you know we do all these kinds of things. We are too much engrossed with our family. We are family orientated and we concentrate on our family more than the exercise” (Meena-P). Emily (HP) mentioned that it was hard for her to be motivated to incorporate physical exercise in her lifestyle: “I think maybe I have to become overtly obese for something to hit my head” (Emily-HP). In comparison to their dietary habits physical activity was not considered to be a significant lifestyle factor.

5.2.1.3.4 Preventive approach to health care: Lacking amongst Indians

The belief among Indians that health problems are a result of Karma and destiny were presumably the reasons for lack of preventative approaches to health care. “Only when we have some problem, we go to the doctor” (Divya-HP) was frequently expressed by participants. This behaviour was perceived to be common among Indians:

> I think that is a pretty common thing among Indians (laugh). I think it is pretty much common that they do it that way. That you need to see something [health crisis]
happen then you try and alter [lifestyle], so I think that’s how they are (Emily-HP).

Participants professed that Indians were not traditionally used to the preventative health care approach and were comfortable in dealing with health situations only when a problem or crisis occurred: “I think they only do that when they have a scare” (Rajiv-HP) and:

Somehow they don’t care until it hits you. I have some friends who have got diabetes, uncontrolled diabetes they don’t do the blood sugar levels at home. I tell them you are a time bomb, one day your going to explode even then no, no walking, no dieting. Actually one of my friends who have got diabetes, she eats anything and everything and I am there watching her. It looks very silly. It is really sad. It is very sad. I don’t know how we can increase the awareness (Rajini-HP).

Similarly Maria (HP) felt that dealing with health problems as and when they occur was not uncommon amongst Indians: “It’s once again the attitude we have. Not tune to preventative lifestyle. Like especially Indians deal with - when this comes you deal with it”. However an increased awareness of risk factors for heart disease was perceived to change this approach, especially amongst new migrants. This was due to the reason that new migrants would be less aware of risk factors for CHD:

I guess for an Indian, who would come to a western country, initially they wouldn’t know the risk factor because the health system in India is more of a curative system, it is not a preventative system, so you don’t have much public health [to be aware of the risks]. You know you don’t get messages saying; ok you have got to reduce your diet and all that stuff. So I guess the awareness would be less (Thomas-HP).

Being aware and knowledgeable about health and illness and particularly working in the health sector, gave a sense of confidence and the attitude that they did not need regular health checks, as they knew what to expect if an event of cardiac illness occurred. Participant Jyothi (HP) felt she was capable enough of looking after their health but felt that other Indians who were not in similar
work situations had to be more careful and take a preventive approach to health through regular health checks. However Jyothi (HP) did not realise, that she could miss long term conditions such as hypertension and diabetes which could be asymptomatic for years, unless she herself had regular health checks and necessary investigations to rule out these risks for CHD.

It depends on I would think me being very aware of it, maybe working in a hospital I know what things are so I don’t think I need it [regular health checks] because I can feel when I’m not well and things. But in general population it probably is good to have (Jyothi-HP).

Fear of being diagnosed with a serious health problem was one of the reasons for not seeing the doctor: “Sometimes some people think it’s like scary, they [doctor] will tell you something’s wrong” (Priti-HP). The best indicator for a lifestyle change or change in health behaviour was how physically fit they were: “When my body starts telling me. My body will probably start telling me that I need to go and get myself checked. But as of still today I don’t think I have the need to” (Sindhu-HP). Again this seems to reveal a lack of knowledge about the silent nature of many of the indicators for CHD.

The younger generation Indians felt that taking care of health and implementing healthy lifestyle in the family was more for the parents to worry about, as they were older. Hence, parents were perceived to be at greater risk for illnesses, in particular cardiac illness, in comparison to their children:

When you ask me now [about healthy lifestyle] I think it is important, but I never used to take it importantly and I. I always tend to think it is a parent’s problem (laugh), parents are at risk and not me. So I don’t know, maybe I will start thinking of it when I become a parent, I am not sure. You always tend to think like that (Rajiv-HP).

5.2.2 Being Indian migrants in Australia: Adapting to new health beliefs and behaviours in relation to CHD

There was a strong sense of being Indian among participants, with their health beliefs and practices being largely influenced by their entrenched concept of
Indian-ness. Nevertheless, their health behaviours and attitude was to a certain degree influenced by the Australian society and culture and is presented under the following minor categories as indicated in Table 6.

Table 6: Being Indian migrants in Australia: Impact on health and CHD experience

<table>
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<th>Minor Categories</th>
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<td>Adapting to the Australian society: Positive trends in health behaviour</td>
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<td>Unhealthy dietary habits: Exacerbated after migration</td>
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5.2.2.1 Adapting to the Australian society: Positive trends in health behaviour

Participants felt that the Australian society and culture had in many ways contributed positively to their health and well being and changes to their health attitude and behaviour were part of the process of adaptation to a new culture:

*Health wise, well probably it helped me grow as a person in many ways, it makes us so much more health conscious and the lifestyles that we live here because I know even when we go on holidays and whatever, it’s fine to fit in for a short while but I always think I couldn’t do this [Indian lifestyle] on a long term basis. As much as our roots are there, we know where we come from and we love our people, we just get so used to a different lifestyle and a different culture* (Sandra-HP).

Participants felt that they had become more aware of the need to keep fit and healthy after migrating to Australia. This was considered as another positive aspect of migration:
Positive I would say that I have become more aware that I need to get physically fit but that’s also because I’m ageing and I’ve realised the need for it, whereas when I was in India, I could get away with eating a couple of extra things and not putting on that much weight. I think it’s the age factor as well as the migration factor (Sindhu-HP).

With health care perceived to be more expensive in their own country and preventive health care not being affordable to the majority of the population, participants felt they were privileged to have these facilities when they migrated to Australia:

Obviously cost is a factor especially in India, if you are not in the upper high class, if you are not making enough money, I think you tend to neglect your health, because of the cost factor, I think. Whereas here, you can get it routinely done (Thomas-HP).

In addition to the cost, the quality of care was considered to be better than what they would receive in India:

There is one positive benefit migrating here, my asthma is very well controlled. When I was in India I don’t think I got proper medical advice, treatment and another thing is because of the pollution in the environment, the dust and all that. The lifestyle is different I used to get quite severe asthma attacks, I couldn’t perform some of my other things, but after coming here as I was telling you I don’t even remember I had asthma (Rajini-HP).

Even though participants acknowledged that the Indian diet and exercise habits amongst Indians were not healthy, they did make efforts to try and follow healthy practices after migration. Many tried to change their cooking and dietary practices. In particular, they were more conscious not to reuse oil for frying, which is a common practice in India.

I mean mostly we eat, some curry or something. Frying stuff, sometimes we fry if we want to have some chicken or something, or fish, we might fry that. But again we would try and a) use the most healthy oil and b) don’t reuse the oil. Which is something we quite often do in India, because
obviously oil is expensive there, so you kind of reuse the oil, but we don’t do it here. We try and take the maximum precautions (Thomas-HP).

Emily (HP) who had migrated to Australia about two years ago with her family had already become aware that healthy alternatives to their diet were beneficial for her family: “Actually we have switched to the low fat version of milk and yoghurt. I have switched to the light coconut milk and also I don’t use much coconut in my cooking”. Similarly Thomas (HP) made sure that they did not accentuate the negative aspects of their Indian diet by introducing unhealthy take away food for his family:

We are looking at the diet and making sure we don’t eat too much junk food and less sugar and even for my kid, because she, there is an abundance of junk food here, in Australia and it is readily available and it is not that expensive, which is different from in India.

Introduction of foods considered to be beneficial to health, was considered as a positive addition to their diet: “I do eat nuts, I consciously include nuts in my diet because I have read so much about nuts and also previously my diet was rich in carbohydrate (Rajini-HP) and “We use wholegrain bread and are also trying to introduce salads, though its not a main as a side dish” (Maria-HP).

Fat content of foods in their diet was something that participants were very cautious about: “In cooking well we try and make sure the oil is cholesterol free, use less oil and light milk and yoghurt” (Thomas-HP), “We are basically very cautious about our food especially the fat content” (Maria-HP) and similarly participant Rajini (HP), explained how she was cautious about her family’s diet: “Yes I am cautious about diet. With regard to my family, I make sure I provide them with healthy food. As much as possible I try to comply with the Australian guide to healthy eating”. Those participants (For example Thomas, Maria & Rajini) who had made healthy choices with their diet, nonetheless held the view that majority of Indians would consume unhealthy traditional food regardless of the health consequences.
Participant Emily (HP) supposed she was quite vigilant about her dietary habits: “I try not to eat oily foods or anything that is too sweet”. The only thing that I actually put is two spoons of sugar in my tea twice every day. But I have checkups regularly for Diabetes”. Often, avoiding oily and fried foods was of prime importance: “Our family is very diet conscious. Our intake of deep fried food is very less. Maybe once in six months. We are vegetarians and also try and avoid a lot of starchy food” (Jyothi-HP).

5.2.2.2 Unhealthy dietary habits: Intensified after migration
Although participants acknowledged that healthy dietary modifications were implemented after migration, there were instances where dietary habits seemed to get worse with migration. This was due to the affordability and accessibility of foods, of which some were new to the diet – food such as the addition of full cream milk, cream, cheese and butter. The availability of this ‘new’ food exacerbated existing unhealthy dietary habits. Full cream milk, cheese and 100% cream were liberally added to traditional Indian dishes, which enhanced the fat content of these dishes thereby making it more unhealthy and further increasing the risk of heart disease. In addition fast foods and take away foods became necessary and convenient for Indians, given the new burden of domestic chores on the family after migration. Confusion reigned in determining what was right, what was wrong and which path to follow. Living in a different society seemed to cause this perplexity: “In thinking, in food, in religion, your beliefs, you don’t know which one to follow, which is the right path” (Asha-FM).

5.2.2.3 Impact of migration on the CHD experience
Although migration to Australia did not directly impact on participant’s CHD experience, factors such as loneliness and social isolation and resulting lack of extended family support, difficulties obtaining employment, hectic lifestyle and racial discrimination were perceived to cause stress and consequently CHD. ‘Healthy’ participants also expressed similar views. Participants believed that life was a struggle and was stressful after migration. In particular, difficulty in
getting employment was considered as a major stress and as being contributory to cardiac illness:

_Last year he got a redundancy from his work…they were cutting down on staff. It had been a long struggle, he couldn’t find a job in his field and he tried to set up his business, which was taking a long time and wasn’t going anywhere. So it was nine months of struggling and struggling and in September he had a heart attack_ (Asha-FM)

For some participants, hope of getting any employment was shattered and they were still struggling, unable to find anything suitable despite having tertiary qualifications. They had always assumed their qualifications would be a major positive factor in securing a job in Australia. Back in their own country they had to compete with a lot more people in obtaining a job, due to large numbers of people with same level of educational qualification. This had been frustrating and was one of the reasons for them to migrate to Australia. They presumed that there were not as many people in Australia who would have comparable education. However, they were heartbroken to face the reality after migration, when they realised that their qualifications did not help them to obtain a job. Rather, it was local reference and experience that were necessary to obtain a job and they didn’t have either of them. Also there is the possibility that surplus well-educated people may apply for each job. This was a very disappointing situation as they were eager not only to support themselves but also to financially support their families back home:

_Getting a job here is very difficult. The thing is we maybe 5 times or 10 times more qualified than the people they need but they want some local reference or something like that. It’s horrible. For a new comer how they are expecting to get a local reference and a lot of challenges. I am still struggling_ (Vivek-HP).

A relaxed lifestyle, having friends around for company and support were a few things that participants in this study, missed a lot after moving to a different country. They were used to a slow pace of life before migration. Both at home and work they were in an environment where they received a lot of support and
help. Hiring people for normal household chores on a day to day basis (in most cases twice a day) was very affordable and convenient. Every day domestic help back in India included dishwashing, sweeping and scrubbing of floors, gardening, toilet and bathroom cleaning, washing and hanging out clothes for drying, cutting vegetables, small errands to the local shops through the day and dropping and picking up children from school. The workplace was surrounded by friends and support and was not considered stressful. However, after migration, with domestic help unavailable or prohibitively expensive, they were burdened with a lot of domestic chores they were not used to and this was therefore considered as a burden. Even employers’ expectations at work were considered unrealistic and therefore stressful:

Maybe his style of living here, back in our country we have a more relaxed sort of lifestyle. We don’t have to wake up early and rush. Even at work you don’t have to rush. At work you have got your friends around you and you are coming into this sort of society and over here it is a big change, you get a shock to your body and your mental and everything (Arun-FM).

A number of participants in this study (n=10), felt they were discriminated against, by others as a result of being Asian and dark skinned. This probably helped them understand that other Asian community groups were also experiencing discrimination and was not unique to being Indian: “…Because he attaches meaning to every thing… we live in a discriminatory world, so he thought we always had to work double hard because of our colour. We are the coloured people” (Rani-FM) and “It is a different land and difficult to find work. If they can’t find a person they will take you. But if there are more persons they will take an Australian” (Rani-FM).

As acknowledged by Mary (FM), the notion of isolation and discrimination faced by her spouse was partly due to his attitude and a sense of superiority over Australians. Mary (FM) was the only participant in this study who raised this
issue and none of the other participants had similar concerns as Mary’s. She
cared her husband was not successful in adapting to the Australian culture and he
was reluctant to accept their values and customs, which inhibited him from
making new friends. Therefore a sense of loneliness and isolation prevailed
even years after migration.

I think it was the sense of isolation in this country.
...And missing the stimulus of conversation. He also
had a slightly arrogant attitude to Australian culture.
The do have their cultural antics but he just wasn’t
happy here. I think it was just being separated from
his friends (Mary-FM).

The sense of isolation was exacerbated by racial intolerance, which was
described as something very difficult to tolerate. This was particularly hard for
Rita (P) who did not get any support from her divorced husband, who in no way
provided support for their children. To avoid being harassed from her
neighbours, most of the time Rita and her children had to make themselves
scarce and hide indoors. She was sad that she had faced this racial intolerance
for years and nothing could be done about it. She also did not think of
approaching anyone for help:

The problems my children have had, the things they
[neighbours] have done to us: Calling out and
swearing at me and my daughter... When we came
home I used to say sit down and hide because I can’t
take the swearing. I used to come home open up the
gate open up the door and run inside and we would
all stay indoors. I have endured this since 1991 (Rita-
P).

At times, participants felt they would have achieved a lot more if they had not
migrated to a different country: “Actually I had a really good job in Fiji. I was
earning good money there. By this time I would have been living in a very good
place. Such is life” (Arun-FM).

Stress associated with adapting to a new country was one of the concerns
raised by participants: “Stress, diet, change of lifestyle and I think that is it. And
also you see what happens coming to a new society the culture and you have to grope your way around and that can cause you some stress” (Dev-P). Significant changes to dietary practices was a concern, especially for participants who did not migrate with their family and for migrants who were single: “Because of the kind of food traditionally we are used to, it is changing suddenly. It is a sudden and acute change from eating fresh fruits cooked daily to tin and take away food” (Mira-HP). Participant Dev (P) had similar concerns: “Diet is the factor plus the lack of exercise. We had to walk everywhere but here you have cars. The car can do some damage. So it is the general lifestyle”.

Changes to the family structure after migrating to Australia was considered to be an added disadvantage and was perceived as stressful. The Indian system of living in a joint family or an extended family provides the advantage of living with many family members and being able to resort to any of them if a person needs help of some sort or even just for company. Similar support was felt to be lacking as expressed by Dev (P) after he migrated with his wife to Australia. Also friends who would help whenever required and ease of accessibility of friends was something he missed:

One thing is that I had a lot of friends in Calcutta. Although my living space was very small but there was a space. The whole city was mine. People were more accessible. Even when you are stressed you can find some company. What happens in this society is that having a nuclear family, not having an extended family the stress builds up. In extended family there is one advantage that the tension can be distributed. But in nuclear family it is not like that, it builds up. That was one of the factors (Dev-P).

According to the Indian culture, a woman is given abundant support from her family members both during pregnancy and for at least six to eight months after child birth. The woman lives with her parents for the last few months of pregnancy and first six to eight months after childbirth during which she is provided with every kind of support from her family. In India, both pre and post natal period is considered to be huge change in a woman’s life and she is
looked after as a precious person by her family members. During this time the woman has plenty of time to pamper herself and she is provided with the most nutritious food and plenty of love and support. This family support makes child birth and the post natal period a very enjoyable and comfortable period in a woman’s life. Bathing the child, washing its clothes and nappies are a few things the woman does not have to worry about. Such immense support is not available after migration. At the most a family member, most often the woman’s mother might possibly come over and support her for a few months and this is not the same when compared to the support she gets when she is living in India. Lack of this family support enhanced emotional distress amongst participants.

Rajini (HP):

*Negative one is when I was pregnant and having children, then I had to do everything, lack of support and the work is enormous and the newborn baby and cleaning and all that, we couldn't afford to pay for cleaners or anything, we were just settling. So that had a lot of effect on me and also the family. That’s the one thing I found negative, because if I’m exhausted and tired I will yell at my husband. You come home and then sit and he’s exhausted working 10 hours, so we used to fight a lot and there were quite a few problems in that way (Rajini-HP).*

Financial burden was one of the main causes of stress. Most participants had left India at stage in life when they were in well paid employment and were financially secure. After migrating to Australia they had to start all over again and this initial period in a new country was risky, unpredictable and stressful. Also, leaving their family members behind was disheartening:

*Latha (HP):*

*Physically I was okay when we came here, but emotionally I was depressed because we don’t have any family here and it was a big change for me especially financially, so we were well established and when we came we started from scratch. So I was emotionally very much disturbed (Latha-HP).*
Stress as a consequence of migration was considered by participants to be contributory to cardiac illness and as an unswerving factor in the lives of migrant Indians in Australia, indirectly impacting on their cardiac illness experience.

5.3 Summary of findings
The findings discussed in this chapter reveal the core concept of ‘Being Indian’ as having a significant influence on participants health attitude and behaviour in the context of CHD. Findings from this study suggest that the impact of Indian culture on participants understanding of CHD and their health beliefs and behaviour in relation to CHD, is profound. The centrality and perceived distinctiveness of Indian culture influencing every aspect of participants’ health and CHD experience are evident from this study.

Characteristics such as putting themselves last, tolerating pain and illness and importance of pleasing others were perceived to be unique to Indians. With Indians being considered as resistant to change, it was not easy to change their dietary habits. The influence of the concepts of Dharma and Karma derived from the Indian culture placed the participant’s family on the forefront, rather than their own health. This meant less priority was given to health by Indians, with health problems and illness being dealt with only when considered absolutely necessary. Therefore their visits to the doctors were reserved for emergencies, when they felt the health problem was serious enough to seek medical attention.

Strong belief in the Indian culture led participants to continue their conventional lifestyle although certain aspects such as an unhealthy diet and inadequate exercise habits were known to be contradictory to health, placing them at risk of heart disease. Participants held Indian culture to be responsible for their unhealthy lifestyle. Despite an unhealthy lifestyle being attributed to Indian culture, participants felt that their cultural beliefs gave them the strength and courage to cope with cardiac illness and even helped them survive and recover.
from the cardiac event. Conversely, not following Indian culture was considered
to be contributory to cardiac illness. Indian culture was deep rooted in all
aspects of these migrant Indians’ lives, from health and well being to infirmity
and had a huge influence on their perceptions of CHD.

Being able to carry on with life without having to depend on others for normal
activities of daily living and not falling sick frequently were considered as being
healthy. Both mental and physical health were considered by study participants
as essential to stay ‘healthy’, with mental wellbeing perceived by participants, to
be more important and necessary for maintaining physical health. Well-being
and comfort of family members was a priority over their own health. As a result
of this sense of duty towards the family, making money to keep the family
comfortable was more important than maintaining optimal health and neglecting
one’s health was not uncommon. Being thin was associated with ill health.
Occurrence of the CHD event was believed to be due to their Karma and was
something, which could not be prevented and had to happen. CHD was
believed to be a problem with elderly and therefore younger participants
considered it unnecessary for them to be cautious and prevent its occurrence.

Increased health awareness and positive trends in their health attitude and
behaviour were attributed to the process of adapting to a new society
consequent to migration. In spite of the positive influence of migration on health
attitude and behaviour some dietary habits worsened after migration due to
availability and affordability of foods rich in saturated fats.

5.4 Conclusion
This chapter has presented participants’ health beliefs and behaviours in the
context of CHD and the influence of migration to Australia on these beliefs and
behaviours. In the next chapter the implications of findings from this study
elaborated in the current chapter and the previous chapter will be discussed with
reference to available literature.
ABSTRACT: CHAPTER 6

This chapter elucidates the study findings with reference to existing literature. Indian culture had a significant influence on participants’ coronary heart disease experiences and understanding, and related beliefs and behaviour. Findings from this study fill a gap in the existing literature on the influence of Indian culture on coronary heart disease. The experiences of coronary heart disease for the study participants were similar to the experiences of coronary heart disease reported in other population groups. However factors such as karma and destiny were attributed towards cardiac illness causation. Factors such as participants’ educational levels and area of occupation could have influenced their coronary heart disease knowledge levels. The tenets of Social Cognitive Theory were reflected in participants’ lifestyle behaviours. Given the benefits of physical exercise in reducing risks of cardiac illness and the centrality of family in Indian culture, it is important to use model based interventions that are family focused and are sensitive to the needs of Indian culture. Findings from this study provide a new perspective on why Indians behave in a particular way in seeking health care and in preventing coronary heart disease. Parts of this chapter are published in peer-reviewed journal articles as indicated in Appendix 1.
CHAPTER 6: DISCUSSION

6.1 Introduction
The voices and experiences of migrant Indians in Australia in relation to CHD were presented in the previous chapter. It is now time to reflect on my journey with each of these participants. In doing this I wish to not only come out enriched with their shared knowledge and experiences, but contemplate possible future research and interventions that will focus on providing culturally sensitive and competent care for this group and help reduce preventable risks of a life threatening condition such as CHD. For my participants, their research journey ended after they shared their experiences and their perceptions of CHD at the interviews. However, it seems my journey has just commenced and needs to continue further and explore other untouched aspects of the life-changing event of CHD. I wish to take away from this journey messages delivered from my study participants and think about strategies to ease difficult aspects of their CHD experience. This chapter will elucidate the findings of this study with reference to the existing literature. The implications of these findings for health professionals will also be discussed.

6.2 Indian culture
Findings from this study confirm previous conclusions that individuals and/or their family members with CHD go through significant complexity in their cardiac illness journey (e.g. Benson et al., 1997; Daly et al., 2000; Davies, 2000; Moser & Dracup, 1995). The influence of an individuals' culture on aspects such as living with CHD or recovery from CHD and related health behaviours has been reported in other cultural groups such as British (McGee, Graham, Newton & Morgan, 1994; Thompson & Cordle, 1988), Chinese (Daly et al., 2002), Finnish (Hentinen, 1983), Lebanese-Australian (Daly et al., 2000), North American, (Beach et al., 1992; Hilbert, 1993), Taiwanese (Yeh et al., 1994) and Gujarati – Hindus (Webster et al., 2003). Similarly, for participants in this study, Indian culture and the concept of ‘being Indian’ had a huge impact on the CHD
experience, understanding, beliefs and behaviours in relation to CHD. This study has revealed a strong sense of 'Indian-ness' amongst migrant Indians who consider their culture to be unique. This concept of Indian-ness among migrant Indians has been previously reported by Farver et al. (2002). Nonetheless the impact of Indian culture was stronger in some participants in comparison to others, although all participants were influenced directly or indirectly by their customs and values that were deep-rooted in them as part of their cultural identity. For example some participants were more spiritual and more religious when compared to other participants. This could be due to the heterogeneity of Indian culture where a number of subcultures exist within the Indian culture. Further their beliefs and practices could have been influenced and modified by their education, individual values and the process of acculturation as reported by Jonnalagadda and Diwan (2005).

Thick descriptions by participants in this study provide evidence on the widespread influence of Indian culture on experiences and understanding of CHD by migrant Indians who took part in this study. These findings fill a gap in the existing literature on the influence of Indian culture on CHD. Participants' deep-rooted beliefs about health and illness significantly influenced their reactions to the cardiac illness and subsequent health behaviours and this aspect resonates with reports from other researchers (Donovan & Blake, 1992; Furnham et al., 1999; Farr & Markovia, 1995) who stress on the integral influence of culture on an individual's response to illness and associated behaviours.

The impact of Indian culture on various aspects of CHD will be discussed in this chapter. In the context of migrant Indians who took part in this study, there is uniqueness as well as commonalities in comparison to the general population in a) response to disease course, b) knowledge of risk factors for heart disease, c) lifestyle, health beliefs and behaviors and d) impact of migration on CHD.
6.2.1 Response to CHD

The experience of being confronted with a cardiac crisis was shocking for patients and family members and this resonates with the findings of other researchers who describe an acute CHD as a shocking experience physically (Young and Kahana 1993), psychologically (Daly et al., 2000; Lisspers et al., 1998) and psychosocially (Dixon et al., 2000). The period after occurrence of acute CHD was described as being complex for patients and family members who participated in this study and is comparable to findings reported from prior studies by Daly et al. (1998); Davies, 2000; Jackson et al. (2000) and Thompson et al. (1995). While the results from these previous studies cannot be generalised due to methodological limitations such as a small sample size and qualitative nature of research, they provide insights into the post discharge period after CHD, which suggest a period of stress and vulnerability for patients and their spouses. During this period of complexity, study participants expressed feelings of fear, loneliness, anxiety and insecurity and are consistent to previously reported research (e.g. Benson et al., 1997; Davies, 2000; Lidell et al., 1998; Moser & Dracup, 1995) and studies of people from various other cultural backgrounds (e.g. Beach et al., 1992; Coyne & Smith, 1981; Daly et al., 1998; Mc Gee et al., 1994) where similar feelings have been reported after an acute event of CHD, regardless of the patients' and family members' cultural background. Therefore the CHD experiences of Indians in this study, was in no way different to the experiences of people from other cultures. However for the study participants, these experiences were shaped by their deep-rooted beliefs derived from the Indian culture as explained in the following paragraph.

Factors such as destiny and karma were implicated in the aetiology of cardiac illness by patients and family members and are consistent to the report by Helman (2001), who proposed that supernatural factors are one of the main domains that are attributed by individuals towards illness causation. The interrelationship between karma, the evil eye, ill wishing by another person and illness causations, as a basic belief in Indian societies has previously been
reported by Dalal (2000), Joshi (1995) and Juthani (2001). However none of the patients or family members in this study attributed the cardiac illness to the evil eye or bad wishes of another person. This could be due to the possibility that some of their cultural beliefs were shaped and reframed after migration to Australia in addition to their Western education. This aspect resonates with the report by Smith, Chaturvedi, Harding, Nazroo and Williams (2000) who describe the phenomenon of dualism of at least two cultures amongst migrants, whose beliefs are influenced by their own culture and their experiences in the country to which they migrate. Despite their Western education, the concept of ‘karma’ seemed to be a much deeply held belief. Therefore, apart from the perception by participants that the occurrence of CHD was due to ‘karma’ there were no significant differences in relation to beliefs about causative factors for CHD such as lifestyle, stress and chance which have been reported within other population groups (Jobanputra & Furnham, 2005).

Patients in this study wanted normality in their lives after the cardiac event and this is consistent with studies on people from various cultures as reported by Beach et al. (1992), Daly et al. (1998) and Mc Gee et al. (1994) where survivors of acute CHD, hoped that their circumstances would return to normal in the future. However in this study, the motive behind patients wanting normality in their lives was for the sake of their family rather than their own health, as they did not want to trouble their family members. While people from Chinese culture tend to seek support from their own family for their health problems (Webster, 1997), migrant Indians in this study had a tendency to individualise health problems and sometimes did not discuss these problems even with family members for fear of burdening them (e.g. Varun-P was initially reluctant to disclose his CHD problems with his family and did not want to be hospitalised as he was worried about his family and finances), despite the availability of family support and the belief that family is the main source of support.
In the current study, patients did not want to be a burden on other family members both physically and financially and those patients who were in paid employment, expressed that they were worried about their work (e.g. Rita-P, Lisa-P, Varun-P, and Raj-P). This implied that they felt the need to resume working life as quickly as possible irrespective of its repercussions on their already existing problems of CHD. This aspect of feeling obliged to return to work as soon as possible after a CHD, needs careful consideration by health professionals in providing discharge advice to Indians after CHD. The findings indicate the need for participants to be advised in relation to the appropriate time of returning to work. This is consistent with a Canadian study by Stewart et al. (2000), which indicated difficulties and uncertainties in returning to work for survivors of acute myocardial infarction. The reasons for wanting normality in lives and returning to paid work in people from other cultural groups is either due to financial considerations, to regain loss of independence and identity associated with careers (LaCharity, 1999).

Family members played a major role in providing support to the patients during and after an acute event of CHD and this finding is consistent with studies by Ben-Sira and Eliezer (1990); Daly et al. (2000) and Webster (1997). The impact of the cardiac event on family members was significant and was associated with distress, negative feelings, worry and fear of loss of spouse, as reported in other studies (Coyne & Smith, 1991; Daly et al., 1998; Thompson & Cordle, 1988). Similar results have been reported amongst South Asian families after acute CHD (Webster, 1997); where family members also made substantial changes to their work and living arrangements to closely monitor the recovery of the patient with CHD.

Findings from this study also reveal the difficulties faced by family members in instigating lifestyle changes after the cardiac event. This implies the need for support services for family members (Thompson, 1994). Migrant Indians, who took part in this study, need to be educated to use support services as they
believe their main source of support to be other family members and do not rely on outside sources of support even when necessary. This is also due to the fact that majority of participants do not discuss health issues with anyone outside the family unit.

Indian culture helped participants cope with CHD and ironically, not following Indian culture was perceived to be responsible for CHD. A positive aspect revealed from this study was the influence of culture and religious faith, which helped patients and family members to cope with the illness trajectory. This implied that those who performed their duties in life and did the right things by following *Dharma* were provided with the strength to cope with illness. To the contrary not doing the right thing, and not observing *Dharma* led people to illness and suffering. For example, the Indian culture considers it a crime to eat beef, with the cow being considered a sacred animal. The perception by participant Raj-P that CHD was consequent to his act of eating beef implies that, his cardiac illness was attributed to his actions against the Indian culture. Culture is perceived to be supportive and provide people with the strength to cope with illness. As reported by Daly et al. (1998), coping with illness is influenced by cultural beliefs and practices and this aspect holds with regard to the Indian culture. Findings from this study have revealed the incongruity between the influence of culture on coping with cardiac illness, with participants either revealing the positive aspects of Indian culture that helped them cope with CHD or with Indian culture having no influence on their CHD trajectory and coping. Therefore this area needs further exploration.

**6.2.2 Knowledge of CHD**

The majority of participants were fairly knowledgeable about CHD risks and similar knowledge levels are reported amongst migrant Indians in USA (Ivey et al., 2004). In addition, all of the participants had an understanding of the detrimental effects of unhealthy diet and lack of daily exercise, although two participants mentioned they were not knowledgeable about CHD risks, they
were aware that their diet and physical activity were unhealthy. This finding is consistent with a UK study (Lawton et al., 2006) that explored barriers to physical exercise among Asian Indians with diabetes, where all participants were aware of the importance of physical activity. To the contrary, in the study by Mosca et al., (2000), that explored knowledge of heart disease risk among women from various ethnic backgrounds in the United States, less than 5% of women identified high-fat diet and poor nutrition as causes of heart disease.

CHD knowledge levels determined amongst this study participants could partly reflect the fact that majority of the participants were tertiary educated which is a requirement to qualify for permanent resident status in Australia, particularly in the priority processing category for skilled migration (DIMA, 2006). In addition, nine participants had a background in health or a health related field with eight being employed in the health care system and one participant having a health degree. Individuals with lower levels of education are reported to have poor knowledge of CHD risk factors (Andersson, 2006). A study of knowledge of risk factors for CHD amongst Indians residing in India would provide a good spread of the sample in terms of education and socio economic status and would probably provide results at par with people from other cultures.

Despite being knowledgeable about CHD risk factors, participants in this current study revealed the need to further increase their knowledge and awareness of CHD. The need to enhance Indians’ CHD knowledge levels has previously been recognized by Farooqi et al. (2000), who reported different levels of knowledge of risk factors for CHD among South Asians in Leicester, UK. This then gives rise to the need for risk factor knowledge assessment in the migrant Indian community groups before any health education programs are planned. The need for health education programs has often been stressed in the literature (Bahl et al., 2001; Enas & Senthilkumar, 2001; Gupta et al., 1995; Kanduri, 2003; Yeolekar, 1998), but the existence or development of any tailored health education programs for Indians has not been reported.
The perception that Indians associate large body size with being healthy (Bush et al., 2001) was an issue re-emphasised by study participants, indicating the need for education on risks for CHD. Participants in the current study felt that they were individually knowledgeable about risk factors for CHD. However they perceived that there was a general lack of awareness of CHD risks amongst Indian community in Australia. Again this could be due to the educational status of majority of the participants, who were tertiary educated. CHD knowledge levels could be low among other people from the migrant Indian community with lower levels of education and in those Indians who have migrated to Australia based on a specific skill or trade. This raises the importance of increasing community awareness of increased risks of CHD in migrant Indians.

Knowledge about risk factors for CHD was not sufficient to instigate healthy lifestyle behaviors amongst Indians. The perception of being at risk and mere knowledge of risks is unlikely to motivate people to adopt healthy behaviors (Blaxter, 1990; Van der Pligtt, 1998) or bring about changes in behaviour and this aspect was true among study participants. Although people are aware of the lifestyle risks of CHD they are also aware of the random nature of disease distribution (Davison et al., 1991). Similarly, patients in this study often mentioned “Why me?” when struck with acute CHD as they did not think it would happen to them. Cultural patterns and beliefs are associated with the position of groups and individuals in their social structure. In the event of an illness, not only are people’s behaviour complex and grounded in the context of their culture, their ability to change against their ways of thinking and acting about health and illness are also deep-rooted and therefore extremely difficult to change (Kelly, 2005).

Unlike CHD risk factor knowledge, the ‘healthy’ participants in this study acknowledged that their knowledge of symptoms of acute CHD was inadequate and that they were not fully aware of all the symptoms. Participants perceived that the symptoms of acute CHD could mimic the symptoms of other non-
cardiac problems such as gastritis and were therefore confusing. Lack of knowledge of CHD symptoms have been described as the main reason for delays in hospitalisation and in seeking medical care in a study conducted by Malhotra et al. (2003) in India. Contrary to a previous report by Ratner et al. (2006), who reported that an individual’s education was an important determinant of CHD symptom knowledge, ‘healthy’ participants in this study demonstrated lack of awareness of CHD symptoms despite majority being tertiary educated. This could be due to the attitude of ‘healthy’ participants in this study (majority of whom were in a younger age bracket in comparison to patients and family members) who felt that CHD was not their problem and was something that their parents had to worry about.

6.2.3 Lifestyle, health beliefs and behaviour

An unhealthy lifestyle was accepted as the norm of Indian culture and practiced by most study participants. The tenets of Bandura’s (1977) Social Cognitive Theory were reflected in the personal, environmental and social factors that influenced health behaviour of participants. For example, environmental and social factors comprised of lifestyle practices including diet, physical exercise, smoking and alcohol consumption, having fixed beliefs about right and wrong health practices, keeping health issues within the family, lack of illness preventive measures and adaptive behaviours to a Western society. Personal factors included aspects such as tolerating pain and illness, putting themselves last and prioritising family needs over an individual’s health needs. Even though participants knew about the negative effects of an unhealthy lifestyle they perceived the locus of control to be external. The majority of participants thought that their culture and lifestyle were part of their identity as an Indian and something that they believed could be naturally followed as they were “fitting into” their culture and this aspect resonates with the report by Doorenbos and Nies (2003). Such behaviours were considered in the main to be followed not only by themselves and their families but also by a majority of people from the Indian community. Furthermore, being an integral part of the lifestyle, they did
not question or modify their behaviour because it was learned, shared and passed on from generation to generation (Knott, 2002). Nonetheless such behaviours are considered to have a significant impact on CHD risks (Charlton et al., 1997; Hunt et al., 2000). It is therefore essential to modify these behaviours by use of appropriate models of behaviour change interventions planned in a culturally sensitive manner (Kelly, 2005; Knott, 2002; Levy & Gardner, 1999). Difficulties in integrating lifestyle changes after CHD have previously been reported by Daly et al. (2000).

Social isolation is reported as an important lifestyle factor contributing to CHD risks (Misra & Gupta, 2004; Tennant, 1999; Toobert et al., 2002) and poor social integration predicts a four-fold increase of adverse outcome factors in CHD (Orth-Gomer, Rosengren & Wilhelmsen, 1993). Poor social support adversely affects other lifestyle factors such as smoking, diet and exercise and may also cause depression (Tennant, 1999) and poor psychological well being (Lin, Ku, Yang & Wu, 2000). Among migrant Indians social support is reported to influence dietary intake, self-rated health, participation in healthy behaviours such as physical exercise and positive influence on overall health status (Jonnalagadda & Diwan, 2005). The immense diversity of the Indian culture resulting in migrant Indians not forming ethnic clusters in defined geographical areas (Misra & Gupta, 2004) may result in lack of social support for migrant Indians. With family support being the main form of available support as indicated by study participants, this could result in social isolation and contribute to CHD. Local Indian community organisations should approach new Indian migrants and encourage them to become part of the organisation and enable them to extend their social support networks, an approach that does not currently exist in Australia. The importance of utilising the Indian community in needs assessment and CHD prevention programs cannot be overemphasised (Ivey et al., 2004). This approach also helps develop culturally competent scales and measures for prevention and management of CHD.
On a positive note the majority of study participants did not smoke (n= 24) and/or consume alcohol (n=24). Given the genetic susceptibility of Indians to CHD (Bahl et al., 2001; Enas & Senthilkumar, 2001) and the multiplicative effects of conventional risk factors such as alcohol and smoking on Indians (Enas, 2000; Jonnalagadda & Diwan, 2005; Hughes, et al., 1989), this health behaviour needs to be encouraged and sustained amongst those who did not smoke and/or consume alcohol. Nevertheless it is vital to use models of health behaviour change such as the Health Belief Model, for smaller minority who did smoke and/or consume alcohol to change these behaviours.

A sedentary lifestyle was accepted as part of the participants’ culture and this lack of regular physical activity amongst Indians is consistent with other studies (British Heart Foundation, 2000; Jonnalagadda & Diwan, 2005; Spector, 2002). In addition, daily physical exercise was not considered a lifestyle component by majority of the participants (n=25) in this study and this is consistent with report by Lawton et al. (2006). Nonetheless, participants were aware of the importance of physical activity and adopted some exercise habits in their lifestyle after the cardiac event. However, any exercise regime adopted was quite erratic. This could be either due to anxiety and depression after the cardiac event (Dixon et al., 2000; Lespe’rance & Frasure-Smith, 2000) or due to lack of reinforcement of health promotion strategies (Rodeman, Conn & Rose, 1995). Even though this lifestyle modification was patchy and inconsistent it provides a positive outlook to the success of future exercise programs and health education, which could help Indians to incorporate regular physical exercise as a routine, even from an early age when planned and initiated in a culturally sensitive way (Atri et al., 1997; Baldwin et al., 1996; Naish et al., 1994). It is important to stress the significance of adoption of healthy behaviours from childhood as pathological data provide evidence for atherosclerotic changes that begins in childhood (Williams et al., 2002) particularly among Indians given their genetic susceptibility to CHD.
Lack of time for physical activity was reported by study participants particularly by women in this study, due to needs of family being considered a priority (Williams et al., 1996). The disadvantaged position of South Asian women in exercise participation and sport is not attributed just to their ethnic status or religious belief but is grounded in their culturally gendered status (Snape, 2005). Also patterns of physical exercise by women in this study are consistent with reports in the literature which suggest that leisure time inactivity is high among Indians particularly women (Wong & Wong, 2003). Therefore Indian women could be encouraged to use women only facilities where available for activities such as swimming or engage in other forms of exercise such as regular walking where the style of clothing is not a barrier for physical activity as previously reported (Farooqi et al., 2000). The provision of female Asian fitness instructors could help motivate Indian women to participate in exercise and fitness programs (Kumari, 2004; Snape, 2005).

The proven benefits of regular physical activity in reducing CHD risks by 30-50% in general population (Fischbacher et al., 2004; Wannamethee & Shaper, 2003) and amongst Indians (Hayes et al., 2002), the genetic susceptibility of Indians to CHD (Enas & Senthilkumar, 2001; Tai & Tan, 2005), and reports of insulin resistance amongst South Asian children in The UK (Whincup, Gilg et al., 2002) provide evidence to emphasise the importance of interventions to cultivate regular physical activity amongst Indians from childhood. Also these interventions should take into account the religious cultural and social factors which determine the kinds of physical; activity that might be feasible for Indians (Fischbacher et al., 2004). Application of Bandura’s (1977) Social Cognitive Theory in terms of environmental attributes that implement powerful restraints on behaviour particularly in terms of barriers to exercise for Indians, in additional to cultural and social factors are significant. Fischbacher et al., (2004) advocate that further research is necessary to explore effective strategies that increase the physical activity levels of Indians and other South Asians (Pakistanis & Bangladeshis). Nonetheless, places of worship chosen as the venue for
exercise programs (e.g. temple, church, mosque, gurudwar-place of worship for Sikhs) would increase participation rate among Indians due to the perception of cultural and personal safety in accessing these venues (Moodood et al., 1978). Such an approach would reflect cultural awareness and sensitivity and has proved to be successful in demonstrating increased participation by Indians in such exercise programs (Snape, 2005).

The strongest association with exercise is having home exercise equipment (Sallis et al., 1989; Trost, Owen, Bauman & Brown, 2002). This is applicable for Indian women who perceive cultural barriers to exercise programs based on the notion of not being comfortable with swimwear or difficulties in using gyms that admit both men and women, and other fitness facilities as reported by Lawton et al. (2006). In order to bring about cultural change and achieve a positive lifestyle, healthy alternatives derived from their own culture are considered the most effective approach. Health professionals need to promote positive aspects from the Indian culture such as yoga and meditation into the lifestyle of Indians, rather than providing advice about different regimens for daily regular physical exercise. Yoga is a form of physical exercise that has been practiced in the India over a long period of time. Benefits of yoga in modification of CHD risk factors and in cardiac rehabilitation programs have been reported (Jayasinghe, 2004). It is important for health professionals to assess the benefits and suitability of incorporating yoga into comprehensive cardiac rehabilitation programs. This corresponds to the idea of Knott (2002) who asserts that a culturally sensitive approach is considered an effective way to deliver health care in a culturally diverse society (Knott 2002). Rather than focusing behavioural change interventions at the individual level, the benefits of physical exercise in helping the individual meet the family needs and obligations needs to be emphasised among Indians. This culturally sensitive approach, focussing on needs of family could help Indians change their exercise behaviour.
Food is considered an integral part of one’s culture (Fieldhouse, 1995; Ventegodt et al., 2003) and amongst Indians reflects the traditional Indian way of living. Food and dietary habits amongst Indians was considered by participants as the key component of their lifestyle and was something very hard to modify. In migrants some cultural dimensions are described as very resistant to change of which dietary practices are most resistant to the process of acculturation (Higginbottom, 2000; Van den Berghe, 1984). Socialising, religious functions, community events, festivals and family get togethers among Indian participants in this study were almost always centred on a huge variety of Indian dishes including an assortment of deep fried snacks, sugar concentrated sweets and plenty of rice dishes (implying high carbohydrate intake), with similar aspects reported in earlier studies (Ahmed, 1999; Enas & Senthilkumar, 2001).

Although participants were aware of the beneficial effects of a healthy diet, they were not deterred from a continuation of unhealthy dietary habits. This is similar to a study by James (2004) who reported that African Americans in USA were reluctant to change their dietary habits as it meant giving up part of their cultural heritage. Also nutrition related attitudes and behaviours are described to be established early in life, are culturally defined and individuals may consciously or unconsciously follow their dietary practices to preserve their traditions and maintain cultural and group identity (Crockett & Sims, 1995; Kittler & Sucher, 2001). These behaviours are therefore difficult to modify as demonstrated by patients who took part in this study.

Practices such as liberal use of ghee and reuse of oil are reported as a common practice amongst Indians, in the literature (Ahmed, 1999; Enas, 2000). Nonetheless, in this study, positive changes in dietary practices were observed by participants either after migration or after the cardiac event. The initial impact of migration on dietary practices of participants was an inclusion of full cream milk, cheese and butter into their normal Indian diet and is consistent to other studies by Ahmed (1999), Enas and Senthilkumar (2001) and Kittler and Sucher.
(1989), but did not persist for long as participants switched over to low fat versions of milk and cheese, particularly after the cardiac event. This included use of low fat food alternatives such as skim milk, low fat cheese, decreased use of ghee and reduction in re-use use of oil for deep frying food. This behaviour fits in with the tenets of Ajzen and Fishbein’s (1980) Theory of Reasoned Action, which assumes that individuals make logical use of available information. Changes to dietary practices were possibly due to an increased awareness of CHD amongst Indian participants in this study after migrating to Australia.

Even though study participants did not implement these dietary changes to a desirable level, it indicates that change is possible perhaps when instigated in the right way, without interfering with religious practices. Although nutritionists are increasingly using theoretical models to change dietary behaviours (Glanz & Eriksen, 1993), it is reported that none of the programs centralise community and culture as the prime reasons for health behaviour (James, 2004). Therefore the challenge in bringing about these changes for health professionals is in formulating health promotion programs that are sensitive to the Indian culture (Knott, 2002; Manderson, 1990) and in providing information on healthy alternatives (such as low fat cheese, skim milk and baking and grilling food instead of deep frying) to cooking practices without actually changing the traditional diet (Farooqi et al., 2000; James, 2004). It is also useful to provide referrals to dieticians who are more familiar with Asian Indian cooking styles and dietary practices to help high risk CHD patients and their families (Ivey et al., 2004). In addition, it is important to cultivate healthy lifestyle practices amongst Indians ideally from childhood thereby decreasing the risk factors for CHD and creating a new generation of Indians with a low risk profile for CHD (Farooqi et al., 2000; Enas, 2000).

The belief in vegetarianism and perception by participants that vegetarian diets are healthy needs further consideration, as Indian vegetarian diets are rich in
saturated fats, salt and sugar. This is consistent to the report by Jonnalagadda and Diwan (2005) who believe it is important to closely examine the constituents of these foods before making assumptions that a diet is healthy because it is vegetarian. Also vegetable consumption is reported to be low amongst Indians, both among vegetarians and non-vegetarians (Jonnalagadda & Diwan, 2005). In this study the perception by some (n=18) participants that salad could not be considered as a main meal indicates the need for promotion of an increased vegetable intake amongst Indians, while at the same time decreasing sugar and rice, given the benefits of a diet rich in vegetables (Singh et al., 2002). This is significant because 43% of the Indian–born population in the ABS National Health Survey 2004-2005 reported (ABS, 2005) consumption of between none or one serve of vegetables daily. Therefore this aspect offers propositions for health professionals at the national (Australia) level in promoting a diet rich in vegetables amongst Indians and other population groups. Vegetarian diets are likely to have low intakes of vitamin $B_{12}$, which can result in elevated plasma homocystine levels. In addition low dietary intake of vitamin D coupled with low exposure to sunlight is related to risks of CHD.

As illnesses such as CHD has been ascribed partly to its origins in human behaviour (Kelly, 2005) and given the high incidence and prevalence of CHD among Indians, it is clear that many participants in this study did not exercise their lifestyle choices in ways that are beneficial to health. Although many factors are held responsible for the aetiology of CHD, the role of behaviour and behaviour modification is significant in prevention of CHD and other chronic illnesses (Kelly, 2005). It is therefore important to determine the relationships between beliefs and behaviours as identifying maladaptive beliefs help in the development of interventions (Byrne, Walsh & Murphy, 2005).

Factors that lead to resistant behaviour and ways in which this resistance could be overcome to achieve behaviour changes are explained by various health behaviour models such as the Health Belief Model (Rosenstock, 1974; 1988),
Transtheoretical Model (Prochaska & DiClemente, 1992) and Theory of Planned Behaviour (Fishbein & Ajzen, 1975). Reviews on the effectiveness of behaviour interventions (Roe, Hunt, Bradshaw & Rayner, 1997; Exner, Seal & Ehrhardt, 1997) have established that irrespective of the model used, theory or model based interventions are more effective as such interventions are well planned and delivered with models providing the basis for increased rigor in designing the interventions (Kelly, 2005). Therefore model-based interventions have explicitly stated hypothesis with clearly operationalised outcomes (Exner et al., 1997).

No single model or theory has universal applicability and the choice of a particular model for achieving behavioural change depends on the focus of change. Models which operate at the individual and social level and which take into account the needs of particular population groups are regarded as more effective for bringing about behavioural change (Kelly, 2005) in cultural and ethnic groups. The literature on application of these models is dominated by studies in the USA (Davits, Fish & Kohler, 2004; Godin et al., 1996; Hamm, Juniper, Kerby & Oman, 2004). Very few published studies have discussed the application of the Health Belief Model to specific population groups such as South Asians (Ahmad, Cameron & Stewart, 2005; McAlister & Farquhar, 1992). Studies also suggest that the trans-theoretical model is robust across different population groups (Davits et al., 2004; Rodgers, Courneya & Bayduza, 2001) but have not been applied in a systematic way across ethnically diverse populations (Spencer, Pagell & Hallion, 2002). Since individual patterns of change vary highly across cultures, any behaviour change intervention needs to be tailored to particular population groups and be culturally and socially sensitive (Kelly, 2005). In the context of Indians the potential effectiveness of these models is yet to be determined.

CHD was considered more as a family issue that was not to be discussed with outsiders even when support was needed during the illness trajectory. Similarly
Daly et al., 2002) reported that people from Chinese culture may not seek help from nurses as they rely heavily on their family support. Due to the family being considered as the main source of support by Indians, Webster (1997) suggests that cardiac rehabilitation programs that focus on self–control and being in charge of one’s own health is inappropriate for South Asians. This advocates the need for appropriate family focussed health education programs based on theoretical models of behaviour change that play a significant role in prevention, support and rehabilitation for CHD.

Needs of the family were prioritised over an individuals’ health needs, as they were deep rooted in their culture and resonate with the research report by Ahmed and Lemkau (2000). Nevertheless, study participants were not entirely happy with this aspect particularly when they compared themselves or their parents to other people from the Australian society. They felt they needed to change and look after themselves and their health rather than follow along with a health regime imposed by their culture. On a positive note they also perceived that looking after their health, would consequently provide them with the strength to look after their family. Health professionals therefore need to emphasise a family focused approach to changes in health behaviour of these migrant Indians to allow for this cultural sensitivity as advocated by Atri et al. (1997) and Levy and Gardner (1999), where the importance of an individuals’ health and its indirect benefits to the entire family forms the main focus of health education of Indians. Nonetheless, family members perceived that patients did not discuss about their illness even with their own family members. This aspect is comparable to the report by Kolanad (2000) where pain and suffering is acknowledged and endured with stoicism and accepted as one’s destiny a sentiment felt by most Indians due to their belief in *karma* and fatalism. Also this could be due to the patients restraining themselves emotionally, in order to maintain family harmony as reported by Ahmed and Lemkau (2000) and Hofstede (1998).
Participants’ perceived uniqueness of Indian culture in a wide array of areas such as tolerating pain and illness, not having regular health checks and not having time for themselves, is in fact, true for other cultures such as Filipino and Australian Aboriginal community (Honeyman & Jacobs 1996, Kelahar, Potts & Manderson 2001) and people from rural communities (Wilkes & White, 1988). However, it is envisaged that this aspect needs to be tackled at the relevant cultural level. Education about the importance of regular health checks, dangers about tolerating or neglecting pain particularly chest pain using intervention models of behaviour change that take into account individual’s beliefs and practices are necessary. Using such interventions will increase patient’s compliance in seeking health care and in following health care advice offered by professionals (Murray et al., 2000).

According to the traditional Indian culture and religions (e.g. Hinduism, Buddhism, Jainism & Sikhism), it is considered a crime to harm the body mentally or physically. A person has no right to destroy or intentionally let his health status deteriorate, as he is not the creator. In addition, health is regarded as a pre-requisite for a man to discharge his duties in life properly (The Himalayan Academy, 2006; Mansukhani, 2006; Teachers Training Camp Brindhaavan, 1978). This aspect of the culture should be re-emphasised in study participants, in order to change their health attitude and behaviour towards a healthier lifestyle and in attaining optimal health and preventing CHD risks.

The fact that Indians give low priority to health (Enas, 2000) was also evident in this study by reluctance among participants to have regular health checks. Indian culture was perceived by participants, to be responsible for not teaching individuals to prioritise their health. The importance of maintaining family comfort and fulfilling the families’ needs is prioritised over an individual’s health needs amongst Indians and is consistent to the study by Ahmed & Lemkau (2000) and Miltiades (2002). Similar beliefs about importance of family and prioritising family needs may be held by other groups, particularly Asians
This concept of centrality of family demonstrated by participants could have both positive (e.g. Support) and negative aspects (e.g. health risks).

The perception that Indians strive hard to make money, are ambitious and materialistic (Ahmed & Lemkau, 2000; Patel et al., 1996), was believed to be true by study participants. For example this aspect was held responsible for Indians in neglecting their health, with work taking a priority over health promotion behaviours and is consistent with Misra and Gupta’s (2004) study. Although participants in this study held Indian culture to be responsible for this passive health behaviour, it demonstrates the attitude that health was not the first priority for the study participants. Passive health seeking behaviour has also been reported among Chinese patients who believe in a do-nothing approach and allow fate to take its course (Webster, 1997).

Contrary to suggestions in the literature that there is greater tolerance to pain and suffering (Kolanad, 2000; Pugh, 1991) by Indians and that this may possibly delay many Indians seeking immediate medical attention for acute CHD was something that did not occur with this study participants. This could have occurred either due to the small sample size or to an increased awareness of CHD amongst study participants, with awareness being possibly influenced by their educational status and migration to Australia. Also this behaviour of seeking medical attention without delay relates to the Health Belief Model (Becker, 1974), where participants perceived that their symptoms were related to a serious health problem such as acute CHD and believed that immediate medical care was essential to diminish the threat from acute CHD or to rule out acute CHD.

Indian culture had an enormous influence (Doorenbos & Neil, 2003; Kalman, 1990) on how study participants seek and received health care and resonated with studies by Doorenbos and Neil (2003), Kai et al. (1999) and Kalman (1990).
Illness and health problems were dealt with as and when they arose, medical attention and help accessed most often for health crisis and was perceived as ‘the manner’ in which Indians reacted to health. Not having regular health checks is common practice amongst migrant Indians (Enas, 2000) due to perceived lack of preventive approach to health. These culturally based health behaviours were practiced for years and therefore participants in this study continued to do the same after migration. Gradually this behaviour changed as they adapted to the Australian society and health checks were more regular particularly among participants in whom CHD had occurred. This feature is consistent with Wynadhen et al. (2005) study where they report people’s conceptions of health and illness and health behaviours are also influenced by experiences in the country to which they migrate. This behavioural aspect relates to the ‘Health Belief Model’ of Becker (1974) where the threat of CHD or re-occurrence of acute CHD initiated that behaviour and the belief that having health checks would diminish the threat of CHD was responsible for adopting this behaviour.

Participants in this study had difficulties in maintaining healthy lifestyle changes after a CHD, with similar reports in a study by Wiles (1998) in Southampton, UK, where participants felt that adoption of a healthy lifestyle was a desirable action but one that was difficult to maintain once the period of initial shock wore off (Wiles, 1998). A passive approach to lifestyle modifications after CHD has also been reported amongst people from other cultures such as Chinese (Daly et al., 2002). Nonetheless lifestyle modifications remain the keystone of CHD prevention (Tai & Tan, 2005). Also Indian community leaders in Australia could play a pivotal role in encouraging Indians to make incremental lifestyle changes through ethnic radio, television and newspapers (Ivey et al., 2004).

A discrepancy between perceived risk and actual risk of CHD (Andersson, 2006), among study participants could partly explain the reasons for lack of motivation to adopt healthy behaviours. For example the perception by younger
participants that they were not at risk for CHD as they were in a safer age bracket and that CHD was a problem that their parents needed to worry about, demonstrates a low perceived risk. These participants therefore assumed that because they were young they could eat whatever food they desired and not worry about health checks. As reported by Weinstein (1984), people have unrealistic optimism about their health risks and tend to rate their own susceptibility to health risks as being comparably lower than their peers (van der Pligt, 1994). With change in health behaviour perceived to be extremely difficult by participants and the concept of Indians being ambitious and money minded and similar findings by Ahmed and Lemkau (2000) and Patel et al. (1996), the most efficient approach to changing the health behaviour of participants would be by using the health behaviour model of Protective Motivation Theory (Dunn & Rogers, 1986). By adopting this approach, an increased awareness would build amongst participants, about their vulnerability to the threat of CHD. Additionally, the participants should be encouraged to be confident that a particular health behaviour is effective in averting the CHD threat, and supported to trust their capacity to succeed in substantially adopting the improved health behaviour. They could also be shown that the costs associated with adopting the health behaviour are small while the benefits are enormous. Such factors produce protection motivation amongst participants to CHD and subsequently in adopting healthy behaviours (Dunn & Rogers, 1986) to prevent occurrence or re-occurrence of CHD.

Stress perceived as a contributory factor for CHD by study participants is consistent with reports from other studies (Bahl et al., 2001; Smith et al., 2000; Yeolekar, 1998). In the case of migrant Indians in Australia, in addition to the stresses of migration including financial, racial and social problems, lack of support from extended family and work stressors, natural disasters such as bush fires could contribute to stress and precipitate cardiac events (Dobson et al., 1991). Indians and other migrants could be previously unfamiliar with events such as bush fires and the impact of this event on homes and lives. Indian
migrants in Australia need to be educated about being prepared in the event of a natural disaster such as bushfire.

The issue of culturally related health beliefs is complicated due to the heterogeneity of Indian culture. It is impossible for health professionals to be aware of culturally related beliefs of each sub group of the Indian culture. A simplistic approach in overcoming barriers from subcultures is to question the patient about his perceptions of CHD. This approach helps to avoid assumptions about a patient’s cultural beliefs and levels of acculturation (Jin, Slomka & Blixen, 2002).

A number of researchers have described ways in which health promotion and prevention programs could be made culturally sensitive and appropriate (Anderson et al., 2003; Bechtel & Davidhizar, 2000; Marin et al., 1990; Rimer, 1994). These strategies include peripheral, evidential, linguistic, constituent-involving and sociocultural (Kreuter et al., 2003). Peripheral strategies use materials that appeal to a particular culture by using certain colours, fonts, pictures or titles in their health promotion material, where the visual style of the education material reflects or describes the cultural world of the audience. This approach enhances a group’s receptivity and response to a health promotion or prevention message (Bechtel & Davidhizar, 2000; Kostelnick, 1996; Moriarty, 1995; Resnicow, Baranowski, Ahluwalia & Braithwaite, 1999; Schiffman, 1995). Evidential strategies enhance the perceived relevance of a health issue for a particular cultural group by presenting evidence of the impact of the health issue on the group. Statements which seek to increase awareness, concern or perceived vulnerability to a health issue by demonstrating that it affects other people from the cultural group (Kreuter et al., 2003; Weinstein & Sandman, 1992). For example statements like: “This year X number of Indians in Australia will be diagnosed with CHD and Y number of Indians will die from acute CHD” can help migrant Indians take preventive action.
Linguistic strategies assist health education programs to be more accessible by providing them in the prevailing language of the cultural group (Anderson et al., 2003; Weinstein & Sandman, 1992). Constituent-involving strategies seek to use the experiences of individuals from the same cultural group such as hiring staff members who belong to the cultural group being addressed and training paraprofessionals and natural helpers from the same cultural group and identifying roles for members from the cultural group to provide insights and directions in planning and devising health promotion programs (Altpeter, Earp, Bishop & Eng, 1999; Eng, Parker & Harlan, 1997; Green & Kreuter, 1999; Thomas, Eng, Clark Robinson & Blumenthal, 1998). Sociocultural strategies recognise cultural sensitivities and values, where a cultural groups’ beliefs and behaviours are recognised and built upon to provide context and meaning to a particular health problem or behaviour. This approach helps to choose the optimal program that could be successful in initiating behaviour change or develop new programs that are meaningful to the group (Huerta & Macario, 1999; Kreuter et al., 2003).

6.2.4 Migration
Consequent to migration, racial discrimination, isolation, loneliness, difficulties in securing employment, financial burdens and lack of extended family support was found to be stressful and thereby contributory to CHD and is consistent with findings from other studies (e.g. Balarajan et al., 1989; Farooqi et al., 2000; Larkin et al., 1998; Rozanski et al., 1999). Some participants (n=6) experienced discrimination with the care received both by ambulance services and inpatient hospital care and were disappointed with the health care system. These participants expressed the need for information regarding the outcome and management of their relative admitted in hospital for an acute event of CHD. These experiences are similar to the experiences of migrants from other cultural groups and are consistent to previously reported research (Hickman & Walter, 1997; Krieger & Sidney, 1996; Modood et al., 1997; Schulman et al., 1993; Schwartz, van Ryn, 2002; Schwartz, Woloshin & Welch, 1999). In addition to
social, behavioural and cultural factors, macro-level factors such as racial and ethnic discrimination are described to play a part in illness morbidity and mortality (Singh & Siahpush, 2002). In the UK study by Webster (1997) that explored health care needs of Asian coronary patients and their partners, the nurses themselves felt that the care they offered to Asian patients with CHD was inferior to the care offered to patients from other cultures. It is therefore vital for health care professionals to be aware of the sensitivity of other cultures, question patients about their beliefs about CHD and health practices and endeavor to provide non-discriminatory care. Routine use of simple questionnaires to extract information from patients in relation to their cultural practices, beliefs and behaviours would help nurses to determine areas of cultural sensitivities for patients and make a difference to quality of care provided.

Inequity in quality of health care services in Australia has been previously reported (Gorman, 1995; Kanitsaki, 1993; Lopez & Fazzalori, 1995; Macintyre & Dennerstein, 1995; Pardy, 1995). The Australian governments' adoption of multicultural policy and acceptance of different cultural values and traditions (Blackford & Street, 2000) is a beginning to ease this inequity. Nonetheless, participants' perceptions of discrimination and racism within the health care system may not actually be discrimination or racism. A number of factors including lack of resources in the health care system such as shortage of nurses, workload of nursing staff in a high demand area such as coronary care, could be possible reasons for nurses being unable to attend to patients' needs on immediate request. This experience could be true for any patient irrespective of their culture and participants therefore could have perceived their experiences as being discriminatory or unfair. It is important for this message to be conveyed to patients and family members, so that delays in nurses or doctors or other health care staff in attending to the patients will not be labeled as racial discrimination. However not all experiences of participants after migration to Australia were negative. The positive aspects of migration including access to
health care facilities, increased awareness of the need to be healthy and healthier changes to lifestyle practices including dietary changes and exercise was another important finding from this study which needs further exploration.

6.3 Prevention of CHD among migrant Indians
With CHD being primarily a preventable disease it is important that migrant Indians perceive the threat of CHD. Only then they are likely to take preventive measures (Wong & Wong, 2003). Given the high risk of CHD in Asian Indians due to the genetic susceptibility (Enas & Senthilkumar, 2001; Tai & Tan, 2005), it would be appropriate to use prevention strategies amongst Indians that target people with established risk of CHD (Mant, 1994). This would include those Indians who have a family history of heart disease, personal history of diabetes and among moderate to heavy cigarette smokers. A multifactorial prevention approach termed ‘therapeutic lifestyle changes’ that includes exercise training, appropriate diet and other interventions such as stress management has proved to be effective (Gordon et al., 2004; Tuomilehto et al., 2001). Gordon et al (2004) have demonstrated that therapeutic lifestyle intervention in individuals with risks for CHD can achieve goal levels without medication within 12 weeks of initiating the intervention. Therefore this intervention would be beneficial for Indians at high risks of CHD. In addition therapeutic lifestyle interventions are less expensive and favourably affect multiple risk factors unlike medications for CHD. As migrant Indians bear the highest brunt of CHD and are one of the most rapidly increasing groups of migrants to Australia, it is important to avoid impending costs to the Australian health care system by periodic screening and lifestyle interventions.

Both primary and secondary prevention of a cardiac event could be accomplished by educating individuals and communities regarding self–care and observing illness prevention initiatives. In addition to providing a culturally sensitive and competent care, Indians and other migrant groups need to be educated to be more resilient in the countries to which they migrate. For
whatever reasons they migrated to another country, either for better quality of life and standards of living or for better economic conditions, it is important to adapt to the Western world, be resilient and still preserve positive aspects of their culture. This will help them adapt well to the host nation, decrease stress and maintain optimal health.

There are suggestions that the threshold for normality of biometric variables such as body mass index and dyslipidemia in the normal population are too high for Indians and other South Asians (Kooner, 1997; Patel & Shah, 2004). Health professionals therefore also need to be aware of high triglyceride concentrations, low HDL levels, central obesity, diabetes and physical activity among Indians (Sahni & Leslie, 2004).

A good example for a culturally–sensitive and tailored approach to reduce CHD among migrant South Asians is the project *Dil* (Farooqi & Bhavsar, 2001) based in Leicester, UK. The project included the development and implementation of CHD training and awareness programs for health professionals and a public awareness and education program for the South Asian community. Based on its success this project has now been adopted into mainstream Leicestershire health service. The project has been successful initiating changes in general practice to improve CHD management among South Asians in Leicester. Similarly a community based project *Khush Dil* was set up in Edinburgh, UK. This was a primary CHD prevention project that developed a culturally appropriate framework for identification and screening of CHD among migrant South Asians. The main activities offered by Khush Dil includes training and awareness creation on cardio risks, nutrition and healthy cooking workshops, stress management, walking groups, jogging groups, smoking cessation and alcohol management. This project is now attempting to mainstream its services. Participants in this study and other migrant Indians would benefit with the establishment of similar programs in Australia.
6.4 Conclusions

This study for the first time has demonstrated that Indian culture and its fundamental principles directly and/or indirectly had a significant impact on CHD in migrant Indians who participated in this study. By demonstrating commonalities and uniqueness to other cultures and population groups the study has provided a snapshot of the global problem of CHD from the perspective of a migrant Indian in Australia. Findings strongly indicate the need for tailored, culturally sensitive health promotion and illness prevention programs that use health behaviour models of interventions. Devising model-based, tailored intervention programs would help prevent the risk of CHD in migrant Indians and also prevent recurrence of the problem in those already affected by CHD. This enables a significant reduction in health care costs to manage CHD given the higher prevalence, mortality and morbidity of CHD amongst Indians. Also such successful programs could be transferred easily across other migrant cultural groups.

By generously sharing their experiences participants have provided new insights into the influence of Indian culture on CHD. This provides health care professionals a new perspective on why Indians behave in a particular way in seeking health care and in preventing CHD. These findings will lay the foundations for devising guidelines for achieving cultural competence in the care of Indians with CHD and in reducing their CHD risks. The next chapter will provide a summation of the study and discuss recommendations for future research.
ABSTRACT: CHAPTER 7

The final chapter of the thesis summarizes the study, discusses the implications of the study findings for clinical practice and teaching and provides recommendations for future research. The literature provides evidence that confirms the burden of coronary heart disease among Indians worldwide. Literature also suggests that health beliefs and behaviours are shaped by a person’s culture and by the process of acculturation. Very few qualitative studies have reported on the experiences of migrant Asian Indians with coronary heart disease and related knowledge, health beliefs and behaviour. The qualitative approach of constructivist paradigm was chosen as the methodological approach for the study. Eight patients, five family members and 16 ‘healthy’ participants took part in the study. Indian culture had a major influence on participants’ health beliefs and behaviour in relation to coronary heart disease. The problem of coronary heart disease among Indians needs to be tackled at the primary, secondary and tertiary levels using a multilevel cohesive strategy. Behavioural models of interventions that are sensitive to the needs of Indian culture are important to generate culturally appropriate coronary heart disease prevention and management strategies for migrant Indians. The major study limitation was that majority of participants were tertiary educated, which did not allow exploration of perspectives of participants with varied education levels, which future studies should take into account.
CHAPTER 7: SUMMATIONS OF THE STUDY AND RECOMMENDATIONS

7.1 Introduction
The increased risks of CHD in migrant Indians are well documented globally. Very little is known about the influence of Indian culture on CHD. This study was developed on the notion that in order to provide culturally competent care for migrant Indians with CHD, in a multicultural society such as Australia, it is important to explore the role of culture in influencing migrant Indians’ knowledge, health beliefs and behaviour and experiences of CHD. A constructivist approach guided this qualitative study in which 29 Indian migrants in Australia volunteered to participate. This chapter will recapitulate the major findings from the literature, the methodological approach used to conduct this study and results of the study. The chapter will also highlight the significant cultural issues that have emerged from analysis of study findings and will present their implications for teaching, and education. Subsequently the limitations of this study and issues of generalisation of study findings will be discussed. The chapter will conclude by providing practical recommendations for future research.

7.2 Reflections from the literature
As discussed in chapter two there is ample evidence in the literature that confirms the burden of CHD among Indians globally. This includes high risk of CHD, prematurity and severity of CHD and increased mortality and morbidity from CHD amongst Indians worldwide. An individual’s culture is considered to be integral to a person’s health beliefs, behaviours and lifestyle practices, which are shaped by his/her experiences in the country to which the individual migrates. Culturally competent health care systems alleviate health disparities
and are an essential requirement for CHD risk prevention, management and improved health outcomes. This is significant in the Australian context due to the burden of CHD in Australia and the multicultural nature of Australian society. A number of subcultures exist within the Indian culture, which is therefore regarded as heterogeneous, although many common threads exist among subcultures. *Dharma* and *karma* are the basic principles of the Indian culture, with illness, suffering attributed to *karma* and destiny. Centrality of family is a common feature of the Indian culture with family needs surpassing all other needs of an individual including healthcare needs.

The risk of CHD is higher amongst migrant Indians in comparison to any other population group and this is attributed to a genetic susceptibility to CHD, insulin resistance syndrome and multiplicative effects of modifiable lifestyle risk factors. Lifestyle modification plays a major role in prevention and management of CHD amongst Indians, with lifestyle factors and health behaviours being influenced by their health beliefs. Health beliefs of migrant Indians are in turn shaped by the Indian culture and to a certain degree by the process of acculturation. In general, the everyday Indian diet is described to be rich in saturated fats, sugar and salt. In addition studies report a sedentary lifestyle and lack of physical activity among most Indians.

A number of psychosocial models of health behaviour are used in the context of CHD, although no studies have reported the effectiveness of these theoretical intervention models in Indians. Very few qualitative studies have reported on CHD experiences, risk factor knowledge, health beliefs and behaviours in relation to CHD among migrant Indians. Indians tend to maintain their traditional values after migration, but they also function biculturally and try to adapt to the host nation. However factors such as stress, loneliness, lack of family support and racial discrimination are reported to impact on their CHD experience.
7.3 Methodological Approach

The constructivist paradigm described by Guba & Lincoln (1985) was chosen to explore CHD among migrant Indians residing in Australia as discussed in chapter three. The philosophical assumptions of the paradigm assert that: reality is multiple and is best informed at a given time and context and varies between individuals; knowledge is derived as a result of interaction between the researcher and participants; the inquiry is value-bound and the methodological process is hermeneutic–dialectic. The inquiry is carried out by the human-as-instrument in a naturalistic setting, using qualitative methods of inquiry. Purposive and snowball sampling approach was used to recruit study participants. Semi-structured, in-depth interviews were conducted with 29 migrant Indians residing in Australia, who volunteered and took part in this study. Transcribed data were managed using NVivo software, inductive analysis conducted and emerging major, minor and sub categories identified.

7.4 Reflections of migrant Indians’ experiences, knowledge, health beliefs and behaviours in the context of CHD

Eight patients, five family members and 16 ‘healthy’ participants participated in the study. Majority were tertiary educated and eight participants were employed in health or health related areas. The experience of CHD for patients and family members was associated with feelings of fear, anxiety, shock and perplexity. Patients did not want their cardiac illness to cause burden on their family members. Lifestyle changes made by patients after the event were inconsistent. Majority of participants had a fairly good knowledge of risk factors for CHD. ‘Healthy’ participants’ knowledge of symptoms of acute CHD was not analogous to their risk factor knowledge with confusion in recognition of CHD symptoms and need for more information on symptoms of acute CHD demonstrated by ‘healthy’ participants. Some patients and family members were disappointed with the health care system.
7.4.1 Indian culture and CHD

Indian culture was held responsible for an array of health beliefs and behaviours by participants in relation to CHD. The major ones include:

- The belief that occurrence of CHD was inevitable (*karma*), could not be prevented and had to happen
- Indian culture held responsible for an unhealthy lifestyle
- Family prioritized over health and wellbeing (*dharma*)
- Indian culture as providing the strength to cope with CHD
- Not following Indian culture perceived as being contributory to CHD
- Returning to work and achieving normalcy at the earliest possible, a priority over recovery and rehabilitation
- Being lean associated with ill health
- Family considered as the major source of support after CHD
- CHD and any other illnesses considered as a family matter, something not be discussed outside the family unit
- As Indians considered themselves to be spiritual they perceived it was unnecessary to listen to every advice the doctor and health professionals gave.
- Being resistant to change and cultural barriers to exercise and dietary modifications prevented participants from adopting healthy behaviours before and after CHD.

These findings have been elaborated in chapters five and six.

7.5 Implications for clinical practice

The challenging problem of CHD in Indians needs to be met with a cohesive multilevel strategy and tackled at the primary, secondary and tertiary levels. Behavioral models of intervention tailored to the sensitivities of Indian culture need to be implemented to ensure efficient prevention, management and rehabilitation of CHD in this high-risk population. Interventions that are family focused and those, which develop amicable partnerships with local Indian communities, are important to generate culturally appropriate, sustainable and
effective strategies for CHD prevention and management. CHD prevention approaches should begin much earlier in Indians due to the high risk, malignant course and associated high mortality and morbidity due to CHD.

Individual behaviour counseling interventions for CHD that are available in health care settings are often described to have only modest impact on behaviour change. Only 5 to 15% of individuals who receive an intervention at the clinical setting make significant behavioural changes such as quitting smoking (Ashenden, Silagy & Weller, 1997; Whitlock, Orleans, Pender & Allan, 2002). However these minor behaviour changes and decreased risk factor profile translate to major benefits at the population level when systematically applied to a large proportion of high risk-population groups (Glasgow, Vogt & Boles, 1999; Parish, 1997; Prochaska, 1996) such as Indians in relation to CHD.

The benefits of physical activity in preventing risks for CHD needs to be re-emphasised among Indian families by health professionals. Physical activity recommendations such as regular walks, yoga, use of in-home gym equipment such as treadmills or exercise bikes, are more culturally appropriate, particularly for Indian women. Access to videos demonstrating basics of yoga through local Indian organizations and spice shops will help foster an exercise culture among Indian families including children. Advice to Indians regarding exercise should include incorporating practical, regular and moderated exercise regimes over and above regular day-to-day activities. Providing incentives to employees who follow a healthy lifestyle are currently being practiced in some organisations in the USA. These include providing a gym for employees and flexible hours of employment. This is provided to employees based on the assumption that health promotion behaviours will enhance physical and mental well-being thus increasing productivity among employees (Misra & Gupta, 2004). This approach may be successful in the context of Indians who may be in more sedentary jobs, due to the nature of their educational levels and lifestyle.
Lipid management is considered as the basis of CHD risk reduction (Deedwania & Singh, 2005). General practitioners and clinicians should recommend regular screening for lipid levels and identify any signs of dyslipidaemia among Indians. However the threshold for intervention and treatment targets needs to be lower for Indians in comparison to other groups as the risks of CHD in Indians is at least two fold higher than other population groups. This strategy is similar to the lower recommended threshold for BMI and blood glucose for Indians and other South Asians. Clinicians should also adopt simple preventive measures such as prescription of fish–oil capsules, which play a role in reduction of triglyceride levels and increase in HDL levels (Deedwania & Singh, 2005), although the benefits of fish capsules have not been demonstrated in Indians. Lipid management coupled with model based lifestyle behaviour interventions may prove to be effective for Indians in the context of CHD.

Clinicians and local Indian community organizations should work collaboratively and facilitate access to periodical cooking classes and workshops for Indian women. These community based workshops should emphasize on alternative healthy cooking methods that incorporate low fat, sugar and salt in the traditional Indian diet. The emphasis should be on increasing daily vegetable and fruit consumption and promoting a high fiber diet rich in protein, essential vitamins and folic acid. Periodically professionals need to identify health needs of Indians in order to make referrals to mainstream agencies, health resources and services, yoga instructors, dieticians (who are familiar with Indian diet and cooking habits) and local Indian community organisations.

Clinicians should adopt the approach of therapeutic lifestyle intervention (Gordon et al., 2004) in those Indians who are at risk of CHD either due to a family or personal history of CHD or Type 2 diabetes. This approach includes exercise training, appropriate diet and other interventions such as stress management for high risk Indians.
Health care professionals need to be sensitive to the feelings of racism among Indians, although it may not exist to the degree perceived. By being aware of the cultural sensitivities and major beliefs and practices of Indians, health professionals can make a difference to care provided and alleviate health disparities in the context of CHD. This could include culturally tailored discharge and rehabilitation advice for Indians after an acute episode of CHD. In addition routine use of questionnaires to determine the patient’s perceptions of CHD are useful in determining cultural sensitivities and variations.

7.6 Implications for teaching and learning
Education programs for prevention and management of CHD among Indians should take into account sensitivities of the Indian culture, in order to be successful. Given the centrality of family in Indian culture, education programs for prevention and management of CHD should be family focused rather than focusing on the individual. In addition, model based intervention programs should be tailored to meet the individual needs of Indians with CHD. Health professionals involved in the care of migrant Indians with CHD should be provided with the necessary information about Indian cultural beliefs and ways of seeking health care. Continuing education and periodic in-service programs particularly for nurses, on aspects of providing care for this CHD vulnerable group is necessary. This support will enable health professionals to efficiently meet the health care needs of this group.

Education programs through Indian community organizations to increase the awareness of CHD risks in Indians are essential. Educational programs for Indians that focuses on lifestyle modifications such as healthy dietary habits, regular physical activity and stress management techniques would help Indians adopt healthy lifestyles and reduce risks of CHD. The importance of regular health checks in order to be healthy for the sake of their family should be emphasised among Indians. In addition Indians should be educated to be more
resilient to the host society after migration, rather than stress about many societal situations that are hard to change.

7.7 Limitations of the study
The major limitation of this study was the fact that the majority of participants were tertiary educated. Therefore the data obtained from this study was from a group of educated migrant Indians residing in Australia. This did not allow the exploration of perspectives of participants with different education levels and the perspective of Indians who had lived their whole life or most of their life in Australia. This qualitative study was also constrained by two major methodological factors: time and study context. In addition, the small sample size alleviates the possibility of generalisation of study findings. Furthermore the interviews were conducted with patients and family members were at varying time frames after the cardiac event. In addition the data from ‘healthy’ participants came from a different perspective to that of patients and family members. Nevertheless, the methodological approach including data collection and data analysis procedures and use of actual voices of participants in the text as direct quotes to represent study findings offers to other researchers the option to make decisions regarding the integrity, similarity and transferability of study findings.

7.8 Recommendations for future research
Exploring a number of behavioural aspects of migrant Indians in relation to CHD and changes in behaviour due to acculturation will provide deeper insights into the reasons why migrant Indians demonstrate particular lifestyle health behaviours. Other issues in relation to centrality of the family that emerged from this study will benefit from further research. It would be useful to:

- Explore the impact of Asian Indian culture on second-generation migrant Asian Indians in a Western society.
- Explore the impact of Asian Indian culture on coping with CHD
- Evaluate risk perception for CHD amongst Asian Indians
• Explore Asian Indians’ knowledge of CHD symptoms and barriers to accessing emergency medical care for an acute cardiac event
• Explore barriers to lifestyle modifications after CHD amongst migrant Asian Indians
• Conduct a comparative study of two different cultures in a migrant society.
• Conduct an intervention study to evaluate the effectiveness of a culturally sensitive health promotion program.
• Explore the perceptions of nurses and other health care providers in relation to issues they face in dealing with Indians and other cultural groups, both in hospital and at cardiac rehabilitation.

7.9 Some final thoughts and concluding comments
So far, there has been no published research that describes the influence of Asian Indian culture on health behaviours, beliefs, knowledge, experiences and understanding of CHD by migrant Asian Indians. This study offers insights into the fundamental aspects of Asian Indian culture that influences a number of aspects related to CHD. These findings offer avenues for health strategists to formulate and implement tailored health promotion and prevention programs that cater to the sensitivity of the traditional Indian culture. Internationally, very little qualitative research has focussed on the CHD experiences of migrant Asian Indians and the arduous path undertaken by patients with CHD and their family members. Majority of research on CHD among Asian Indians are epidemiological studies that describe the incidence, prevalence and patterns of cardiac abnormalities and resulting mortality and morbidity (e.g. Bhopal, 2000; Cappucio, Oakeshott, Strazzullo & Kerry 2002, Pais et al., 1996; Kulkarni, Markovitz, Nanda & Segrest 1999, McKeigue & Marmot 1988, McKeigue, Miller & Marmot 1989, McKeigue & Seavk, 1994; Shaukat & de Bono, 1994; Sheth & Nair, 1999; Wetter et al., 2001). This study has therefore paved the pathway for future qualitative studies that could explore various aspects of CHD experiences of Asian Indian migrants and other cultural groups.
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APPENDICES
APPENDIX 1

LIST OF PUBLICATIONS AND PRESENTATIONS

Refereed journal articles


Conference presentations


APPENDIX 2

MEDIA RELEASE

Why Australia's Indian population are more at risk of heart attack

Date: 09/04/2003

A landmark study by the University of Western Sydney will explore why Australia's Indian population have an increased risk of heart attack and a poorer survival rate compared to their Caucasian counterparts.

UWS PhD researcher Shantala Mohan will investigate the health behaviours and lifestyle choices of Indians pre- and post-acute myocardial infarction (AMI), and explore their experiences of heart attack from diagnosis to rehabilitation.

"We all know that coronary heart disease (CHD) is Australia's biggest killer, but fewer may be aware that certain ethnic groups may be more predisposed than others, with Indians 3-4 times more likely to develop heart disease than Caucasians," says Ms Mohan.

"There is a marked prematurity and early onset of coronary heart disease - an important predisposing factor for AMI - in Indians at ages less than 40 years, which is 5-10 years earlier than people from other parts of the world.

"Epidemiological studies have shown that irrespective of the countries to which Indians migrate, they have a higher rate of CHD, and this trend has been consistently demonstrated in Europe, Africa, America and other countries.

"It's a subject that hasn't been explored before in Australia, so that's why I want to look at the experiences of Indian survivors of acute myocardial infarction (AMI) and their families.

"It may be the case that the health beliefs and risk perceptions among the Indian community change with immigrant status as they adapt to the Australian culture, and this needs further investigation."

Ms Mohan, who worked as a hospital medical officer and GP in India for six years before moving to Australia, says a combination of genetic, cultural and social factors have a significant impact on the incidence of coronary heart disease in the Indian community.

"They are in double jeopardy from nature and nurture," she says.
"Nature has provided Indians with high levels of lipoprotein (a), low levels of high-density lipoprotein cholesterol levels (HDL), high rates of glucose intolerance, and a tendency for abdominal or central obesity.

"Nurture is also at work, with Indians traditionally adopting a sedentary lifestyle and a diet high in fat. Eating habits of Indians are varied, but a common diet includes high levels of oil, salt and sugar. Milk used is usually full fat, vegetables tend to be over cooked and saturated in fat, and sweets are high in sugar and fat."

Ms Mohan says the possibility that risk perceptions for CHD are socially and culturally conducted, poses a challenge to health care professionals trying to promote healthy lifestyle changes among these patients.

"Given the significance of cardiovascular mortality in Australia and the multicultural nature of our society, it's crucial for healthcare providers to be aware of the problem of CHD in Indian people in Australia.

"Hopefully this study will contribute to the health of our Indian community by increasing our awareness and knowledge about coronary heart disease and inform our health promotional activities."

Ms Mohan is looking to interview Indians living in Sydney, male and female, who have had a heart attack within the last two years. She also wants to talk to their families. Anyone interested in taking part should contact her on (02) 4734 3180.

_Ends_

_Contact:_
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APPENDIX 3

PROFILE OF STUDY PARTICIPANTS

Patients

1. **Raj**, 47 yrs, worked in the information technology (IT) industry and lost his job a few months before he had an acute CHD. He met his wife after migrating to Australia and has two children. He was under continual stress being unable to find a suitable job. In addition, having a child with a disability added to this stress. With finding a job being a priority, he had little time to change his lifestyle after the cardiac event, although he tried to change his dietary habits.

2. **Rita**, aged 53 yrs, a single mother had faced financial and social difficulties in raising her two daughters. She felt her ex-husband had no time to provide any support to the children and she had to always worry about her children’s future. The cardiac event caused considerable distress as she was worried about the future of her daughters.

3. **George**, aged 69 yrs, a retired schoolteacher had an acute cardiac event when he went on a skiing holiday with his wife Lisa, who also participated in this study. He was happy that his children were settling down well in their jobs and enjoyed his evening walks with his wife. The cardiac event had increased his awareness of the illness and importance of lifestyle modifications to prevent a recurring episode.

4. **Lisa**, 64 yrs is a retired nurse. The cardiac event had given her a scare and she feared that she might die. However Lisa was more concerned about the health of her husband than her own. Going through his cardiac episode as a family member was described by Lisa as the scariest event in her life. She had planned to enjoy her retired life with her family and was disappointed that she had an acute cardiac event after her husband had gone through the same.

5. **Meena** aged 40 yrs, works as an administrative officer in a telephone company. Meena had looked after her mother and supported her for 17 years. She was extremely hurt and disappointed when her mother left home to stay elsewhere. Before she left her daughter’s home she
expressed her dissatisfaction with Meena. Her mother was not happy with the support provided to her. Meena’s husband and children knew that Meena had always given a 100% towards the well-being of her mother. Her mother’s actions had hurt Meena so much that she was at loss for words. However she was happy to have an understanding and supportive husband, who helped her cope with the cardiac illness.

6. **Pramod**, 49 yrs, is an Engineer, who migrated to Australia for better prospects. Nevertheless, after he migrated to Australia, he realised life was a struggle. The acute cardiac event made him realise the importance of healthy lifestyle and regular health checks.

7. **Dev**, aged 80 yrs, migrated to Australia when he was about 40 yrs of age after his marriage to Mary from Australia. He felt that it was too late in life to move to a different country. Being learned and knowledgeable he was successful in imparting to his children, values and principles he had learnt from the Indian culture. He acknowledged that he was lonely after migration as he only had a few friends.

8. **Varun**, 53 yrs, an Engineer by profession was not comfortable in discussing about his health problems with anyone else outside his family circle (i.e. his wife and daughter). He felt deeply responsible for his family needs and comfort, which were a priority over his own health.

**Family members**

1. **Asha**, 38 yrs, wife of participant Raj felt that her husband’s illness (cardiac event) added further to the already existing stresses in her family as they had a child with a disability. She felt that the stress of Raj losing the job was contributory to stress and consequently to his acute cardiac event. She took good care of her husband and was always cautious about cooking healthy food for the family.

2. **Nisha**, aged 45 yrs found it difficult to support her husband Pramod after his acute cardiac event as she was working. She was unable to accompany him for regular walks. She was aware that her husband
would be annoyed if she cooked fatty food and was conscious about her cooking habits after her husband suffered a heart attack.

3. Arun, 43 yrs, was shocked when his brother Pramod, suffered from an acute cardiac event. He was aware of their family history of heart disease and was also concerned about the unhealthy food habits followed by many Indians. He strongly felt that something had to be done to change the Indian way of cooking, particularly at get togethers.

4. Mary, 63 yrs was deeply concerned about her husband's health. She wanted him to see their children settle down in life and often worried that something may happen to him. Mary also acknowledged that her husband had a major role in raising their children. She felt that she should have looked after him better although she knew she had done her best.

5. Rani, 47 yrs, experienced CHD as a family member and said her belief in God helped them cope with her husband’s cardiac event. She did not receive much support from friends, as her husband did not want her to discuss his health problems even with close friends.

'Healthy' participants

1. Thomas, 31 yrs, works as a Research Assistant and is a doctoral student. Having a professional degree in a health field, his knowledge and awareness of CHD is substantial. However, he acknowledges that his CHD knowledge and awareness levels have increased after migration to Australia.

2. Emily, aged 29 yrs, works as Dental nurse. A dentist by profession, she is working towards registering herself in Australia. Emily feels it is important to look after her own health in order to keep her family healthy and meet their needs.

3. Rajiv, 32 yrs, works as an Administrative officer in a hotel. He has a health degree and acknowledges that his knowledge of risk factors and awareness of CHD risks among Indians is not sufficient to practice a healthy lifestyle. He also feels it is more important for his parents to look after their health, as he is still young and healthy.
4. **Divya**, 26 yrs is a housewife and had one child. As she is still young she has not given much thought into following a healthy lifestyle, although she is aware of the CHD risks among Indians.

5. **Maya**, 23 yrs, is an Engineer by profession. She is aware of the importance of a healthy lifestyle but feels it is important to enjoy life as she is quite young. She considers that regular health checks are not really necessary at her age and may be important after she turns 40.

6. **Mira**, aged 24 yrs is a Market Researcher. Although she grew up in Australia, she still follows the Indian way of life. However she is cautious about fatty and sugary foods. The only difficulty she has is cutting down on the quantity of food, which she knows is important. She has taken initiatives to join a gym and plans to exercise regularly.

7. **Vivek**, 31 yrs of age is a Software Consultant. He migrated to Australia after his marriage. Although qualified as a computer engineer he has faced lots of difficulties in obtaining a suitable job. As a result he has been depressed and is frustrated with the employment system in Australia.

8. **Jyothi**, aged 57 yrs is a Hospital Scientist. She feels she has been lucky to be in good health and has a good knowledge and awareness of CHD among Indians and its associated risk factors. She is happy that her family follows a healthy lifestyle.

9. **Shobha**, 44 yrs of age, is an Optometrist. She strongly believes in the importance of a healthy lifestyle and also follows it herself. Unlike most Indians she exercises regularly and is cautious about her dietary habits.

10. **Maria**, 32 yrs of age is a Social worker in a hospital. Her experience with working in the hospital system has enabled her to gain sufficient knowledge of CHD and it associated risk factors. Maria believes that ‘health is wealth’ and therefore it is important for her to stay fit and healthy.

11. **Priti**, aged 37 yrs, works a teacher and is happily settled in Australia with her family that includes her husband and two children. She has not had any major health problems so far, considers her lifestyle to be healthy. However, she perceives that most Indians do not follow a
healthy lifestyle. Although Priti cooks healthy food at home they enjoy the occasional takeaway food and she also loves to go on holidays with her family.

12. **Tej**, 39 yrs of age is a Town Planner. Loves good food and music and enjoys playing tennis. He mentioned that it was difficult to adapt to a new society especially in the initial few years after migration. He also missed being with his extended family in India. He and his family have now adapted well to the Australian society and are leading a comfortable life.

13. **Latha**, aged 51 yrs works as a Supervisor in a pharmaceutical company. Her husband and son are her only family in Australia. She misses the company of her sisters and friends back in India and visits them often. She feels it is good to implement the positives from both cultures and lead a happy life.

14. **Rajini**, 58 yrs of age, works as a Dietician. She has substantial knowledge of CHD risk factors and is well aware of the problem of CHD among Indians. She is concerned about the unhealthy dietary habits of Indians and wonders how this could be changed. She worries that many Indians with Type 2 diabetes are not cautious about what they eat.

15. **Sindhu**, aged 29 yrs works as a Public Health Researcher and showed keen interest in this study. Unlike many Indians she exercise regularly, and is aware of the importance of a healthy lifestyle.

16. **Sandra**, 47 yrs of age works as an Ethics Officer in an area health service. She believes in the importance of regular health checks and a healthy lifestyle. She has considerable knowledge of CHD risks. At the interview she mentioned that it had been years since she cooked any deep fried food and most often the family had home cooked meals.
APPENDIX 4

INTERVIEW SCHEDULE

Patients

- How long have you been in Australia and reasons for coming to Australia?
- Please describe your general health before the cardiac episode.
- Please describe the series of events that occurred from the time of onset of your first symptom till you got medical attention.
- What were your hospitalisation experiences (in terms of care (medical, nursing, etc provided, improvement of condition, any dissatisfaction with care)?
- What do you think contributed to your illness/heart condition in relation to your
  - Culture and beliefs (karma?, any thing in the culture which inhibited you from following the right practices of health)
  - Knowledge of risk factors (Were you aware of the risk factors)
  - Any religious restrictions
  - Life style
  - Food
  - Health care access
  - Stress at work/family/Society and expectations
  - Family history
  - Pre existing illness.
- What have been your lifestyle changes/Modifications?

What has been the impact of this disease on your personal/family and work life?
Family Members

- How long have you been in Australia and reasons for coming to Australia?
- Please describe the series of events that occurred from the time of onset of your relative’s first symptom till he/she got medical attention.
- What were your experiences of hospitalisation of your family member in terms of care (medical, nursing, etc provided, improvement of condition, any dissatisfaction with care)?
- What do you think contributed to your family member/relatives’ illness/heart condition in relation to your/their:
  - Culture and beliefs (karma?, any thing in the culture which inhibited you from following the right practices of health)
  - Knowledge of risk factors (Were you aware of the risk factors)
  - Any religious restrictions
  - Life style
  - Food
  - Health care access
  - Stress at work/family/Society and expectations
  - Family history
  - Pre existing illness.

- What have been your relatives and your lifestyle changes/Modifications after the event?

- What has been the impact of this disease on your personal/family and work life?
Healthy Participants

- How long have you been in Australia and reasons for coming to Australia? Was there pressure to migrate due to family situations/other
- Please describe your general health. What does health mean to you/your understanding of being healthy. Do you think you are healthy/If yes why? /Any aspects of you that are unhealthy?
- Do you perceive yourself/family to be at risk for heart disease?
- What precautions are you taking to avoid heart disease for yourself/family
  - Your dietary habits. (Including: Dietary habits of children/preferences for any particular food/fruit and vegetable consumption/Alterations to dietary habits after migration/).
  - Do you have regular health checks? If no why not? What routine medical tests/diagnostic tests have been carried out recently? When?
  - Describe your exercise habits. (Type of physical exercise/Time devoted to physical exercise/Frequency of exercise/regular/irregular/)
  - Smoking/Alcohol consumption (If yes, since when, how much)
  - Participation in religious/social/community events, how often/participation with/without other family members/its impact on your physical and mental health/social life, foods consumed at these events
  - Cultural and religious beliefs (that could have an impact on health/health seeking behaviour)
  - Impact of migration (Positive and negative and on health)

- Has anyone in your family/network had a cardiac incident.?

- In relation to cardiac disease do you think Indians are at risk? If so why?
What do you think contributes to heart problems in Indians in relation to:

- Culture and beliefs (karma? / any thing in the culture which inhibits them from following the right practices of health)
- Knowledge of risk factors
- Any religious restrictions
- Life style
- Food
- Health care access
- Stress at work/family/Society and expectations. How do you handle stress and stressful situations?
- Family history
- Pre existing illness.
APPENDIX 5

Survey-patients
Project: Coronary heart disease in Australian Indians: Experiences of patients and family members

PhD Student: Shantala Mohan, University of Western Sydney
Supervisors: Professor Lesley Wilkes & Associate Professor Debra Jackson, University of Western Sydney

Dear

Thank you for your time in participating in this study and providing valuable information about the experiences you had when you were diagnosed with a heart problem. A preliminary analysis of information obtained from you has revealed a number of health issues that needs to be addressed in order to maintain good health and prevent heart problems from occurring in the Indian community residing in Australia.

In order to have a better understanding of your experience from an emotional and personal perspective, it would be a great help if you could provide answers to the following questions. Thank you for your time in answering these questions. The information you provide will be treated with utmost confidence. If you need any clarifications in relation to this study please do not hesitate to contact me on 02 4734 3180. Please return the completed questionnaire in the self addressed envelope provided.

Questions (Please attach additional sheets if necessary)

1. What was your biggest fear when you were told about your heart problem?

2. How do you think you could overcome this fear?
3. Did you cry (aloud or within yourself) any time, after being diagnosed with a heart problem?

4. Who supported you the most at that time and how did they provide support?

5. What was your worst experience with hospital care?

6. What was your best experience with hospital care?

7. How has this event (heart problem) impacted on your personal life?

8. How has this experience changed you as a person?
9. Has your relationship with your partner/family member changed after this event?

10. What is your biggest fear now in relation to your health?

Thank you again for your time in answering this questionnaire.
Dear

Thank you for your time in participating in this study and providing valuable information about the experiences you had when your spouse/family member were diagnosed with a heart problem. A preliminary analysis of information obtained from you has revealed a number of health issues that needs to be addressed in order to maintain good health and prevent heart problems from occurring in the Indian community residing in Australia.

In order to have a better understanding of your experience from an emotional and personal perspective, it would be a great help if you could provide answers to the following questions. Thank you for your time in answering these questions. The information you provide will be treated with utmost confidence. If you need any clarifications in relation to this study please do not hesitate to contact me on 02 4734 3180. Please return the completed questionnaire in the self addressed envelope provided.

Questions (Please attach additional sheets if necessary)

1. What was your biggest fear when you were told about your spouse/family member’s heart problem?

2. How do you think you could overcome this fear?
3. Did you cry (aloud or within yourself) any time after your spouse/family member was diagnosed with a heart problem?

4. In what way did you provide support to your spouse/family member at that time?

5. What was your worst experience with hospital care?

6. What was your best experience with hospital care?

7. How has this event (spouse/family member’s heart problem) impacted on your personal life?
8. How has this experience changed you as a person?

9. Has your relationship with your partner/family member changed after this event?

10. What is your biggest fear now in relation to your spouse/family member's health?

Thank you again for your time in answering this questionnaire.
APPENDIX 6

Patients and Family Members

INFORMATION FORM

Project: Acute Myocardial Infarction in Indians: The experiences of patients and their families.

Investigator: Shantala Mohan (PhD Student at University of Western Sydney).
Supervisors: Professor Lesley Wilkes, School of Nursing, Family & Community Health, University of Western Sydney.
Associate Professor Debra Jackson, School of Nursing, Family & Community Health, University of Western Sydney.

I wish to invite you to participate in this study hoping to share your experiences and concerns after you/your family member has had a heart attack for the first time within the last two years. Participation will involve a telephone interview (or face to face, if you prefer). The interview will be audio taped and could last for approximately 45-60 minutes. If you agree to participate please sign the enclosed consent form and forward it in the pre-addressed envelope enclosed. The audio taped interviews will then be transcribed and analysed. If at any time you wish to terminate the interview, you may do so. You may wish to complete the interview at another time and this can be easily organised. If you find any aspect of the research distressing and require access to counselling services this would be arranged within your local area. You will be sent a summary of the research findings at the completion of the study if you wish.

- Consent is voluntary, you do not have to participate in this study. You may withdraw participation at any time during the study.
- Data will be stored for five years in a locked filing cabinet in the Clinical Nursing Research Unit, at Nepean Hospital, Penrith.
- Confidentiality and anonymity will be maintained. All interviews will be assigned a code, known only to the investigator. Therefore you will not be identified by name in any publications.

This study has been approved by the University of Western Sydney’s Human Ethics Review Committee. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Human Ethics Officer at UWS, Kay Buckley, Ph: (02) 45701136. Any issues you raise will be treated with confidence and investigated fully, and you will be informed of the outcome.

If you would like further information about this study, please call: Shantala Mohan on 02 47343180.
Healthy Participants

INFORMATION FORM

Project: Acute Myocardial Infarction in Indians: The experiences of patients and their families.

Investigator: Shantala Mohan (PhD Student at University of Western Sydney).
Supervisors: Professor Lesley Wilkes, University of Western Sydney.
Professor Debra Jackson, University of Western Sydney.

I wish to invite you to participate in this study hoping to share your knowledge and experiences in relation to the topic of heart disease in Asian Indians. The interview will focus on your perceptions of risk factors for heart disease in Asian Indians, culture, lifestyle, health behaviour and health attitudes in relation to heart disease. Participation will involve a face-to-face or telephone interview and a brief pre-interview questionnaire. The interview will be audio taped and could last for approximately 45-60 minutes. If you agree to participate please sign and return the enclosed consent form. The audio taped interviews will then be transcribed and analysed. If at any time you wish to terminate the interview, you may do so. You may wish to complete the interview at another time and this can be easily organised. If you find any aspect of the research distressing and require access to counselling services this would be arranged within your local area. You will be sent a summary of the research findings at the completion of the study if you wish.

- Consent is voluntary; you do not have to participate in this study. You may withdraw participation at any time during the study.
- Data will be stored for five years in a locked filing cabinet in the researchers' office.
- Confidentiality and anonymity will be maintained. All interviews will be assigned a code, known only to the investigator. Therefore you will not be identified by name in any publications.

This study has been approved by the University of Western Sydney's Human Ethics Review Committee. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Human Ethics Officer at UWS, Kay Buckley, Ph: (02) 47360883. Any issues you raise will be treated with confidence and investigated fully, and you will be informed of the outcome.

If you would like further information about this study, please call: Shantala Mohan on 02 47343180.
APPENDIX 7

CONSENT TO PARTICIPATE IN RESEARCH

I _________________________________________________ hereby voluntarily consent to participate in the research project entitled: Acute Myocardial Infarction in Indians: The experiences of patients and their families.

This research project is being conducted by Shantala Mohan, PhD student, University of Western Sydney and is being supervised by Professor Lesley Wilkes and Associate Professor Debra Jackson, both from School of Nursing, Family & Community Health, University of Western Sydney.

I have read and understood the information provided to prospective participants in this research project. I have agreed to participate on the understanding that I may withdraw from the study at any time. I am aware and agree to the interview being recorded on audiotape.

I understand that the findings from this study may be used in future research and may also be published. I have been reassured that any information from this study concerning myself will be treated with confidentiality.

I understand that should I become distressed and require further counselling during the interview I will have access to an experienced counsellor.

NAME: _____________________________________________

SIGNATURE: _________________________________________

DATE: ______________________________________________

PREFERRED CONTACT NO: _____________________________

PREFERRED CONTACT TIME: ___________________________

THANKYOU FOR PARTICIPATING IN THIS STUDY
APPENDIX 8

Patients DEMOGRAPHICS QUESTIONNAIRE

Please answer the following questions. Where boxes are provided please tick the appropriate box

Name ________________________
Age__________________
Sex:   Male ☐   Female ☐   Country of Birth__________

Marital Status: Married ☐   Unmarried ☐  Divorced ☐  Other ☐
Are you married to a relative  Yes ☐  No ☐

Number of children ___Age and sex of each child
_________________________

Parent's country of birth
   a) Mother __________________
   b) Father ___________________

Religion: __________________________

Education:
Primary ☐
   Secondary ☐
   Tertiary ☐

Current Occupation______________

Any Existing Illness______________

Family History of
   Diabetes: Yes ☐  No ☐
   Hypertension: Yes ☐  No ☐
   Heart Disease: Yes ☐  No ☐
   Other (Please Specify)____________

THANK YOU FOR TIME IN ANSWERING THIS QUESTIONNAIRE
Please answer the following questions. Where boxes are provided please tick the appropriate box.

Name _______________________
Age__________________

Sex: Male □ Female □

Country of Birth___________________

Marital Status: Married □ Unmarried □ Divorced □ Other □

Parent’s country of birth

c) Mother _________________
d) Father _________________

Religion: __________________________

Education:
Primary □
Secondary □
Tertiary □

Current Occupation_________________________________________

Any Existing Illness____________________________________________

Family History of

Diabetes: Yes □ No □
Hypertension: Yes □ No □
Heart Disease: Yes □ No □
Other (Please Specify)_____________

THANK YOU FOR TIME IN ANSWERING THIS QUESTIONNAIRE
‘Healthy’ Participants

DEMOGRAPHICS QUESTIONNAIRE

Please answer the following questions. Where boxes are provided please tick the appropriate box

Name ______________________
Age__________________

Sex: Male □ Female □

Country of Birth___________________

Marital Status: Married □ Unmarried □ Divorced □ Other □

Height: _______________ Weight_______________________________

History of Smoking: Yes □ No □ If yes since when, how many and for how long

_____________________________________________________________

History of alcohol consumption: Yes □ No □ If yes since when, how much and how often

_____________________________________________________________

Parent’s country of birth

e) Mother _______________

f) Father _______________

Religion: __________________________

Education: Primary □ Secondary □ Tertiary □

Current Occupation_________________________________________

Any Existing Illness_________________________________________

Family History of

Diabetes: Yes □ No □

Hypertension: Yes □ No □

Heart Disease: Yes □ No □

Other (Please Specify)_____________

THANK YOU FOR TIME IN ANSWERING THIS QUESTIONNAIRE